

APPENDIX S

Surface Water Quality Technical Report

Part 2 of 2

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

APPENDIX S

Surface Water Quality Technical Report

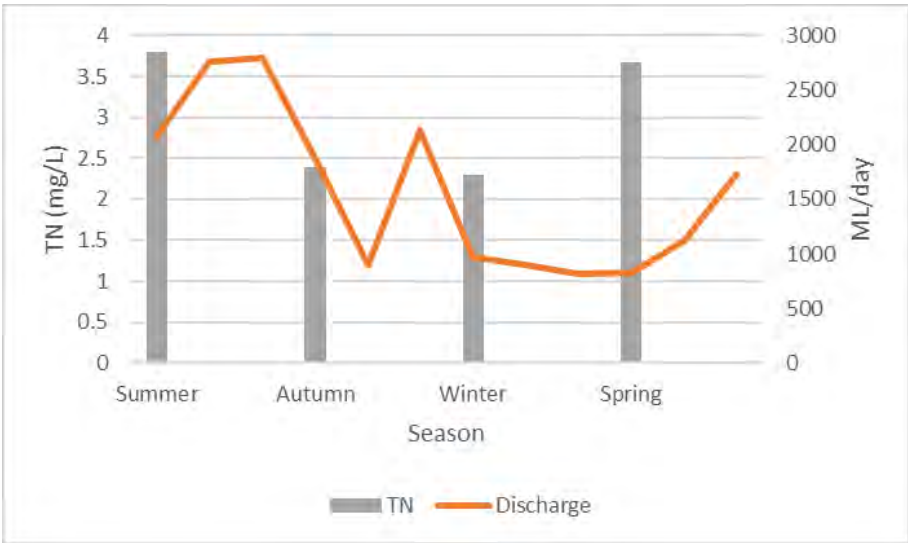
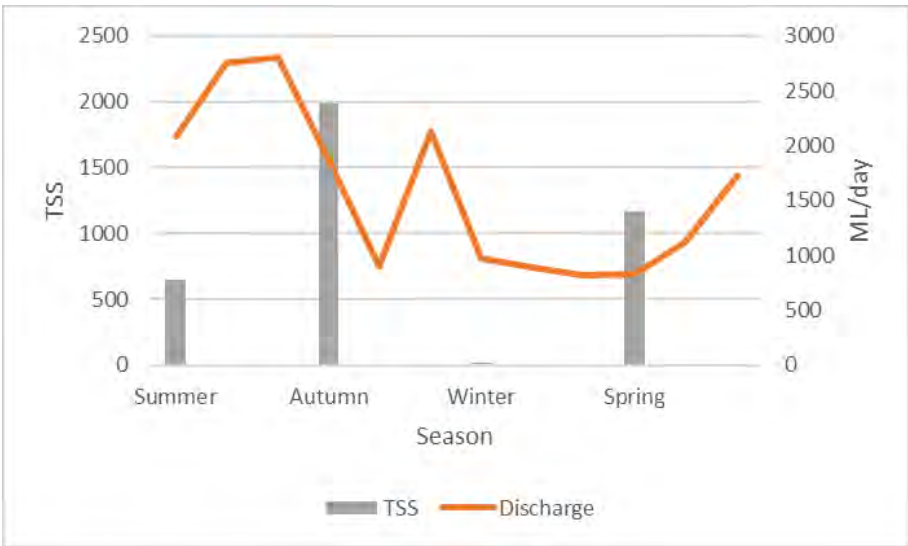
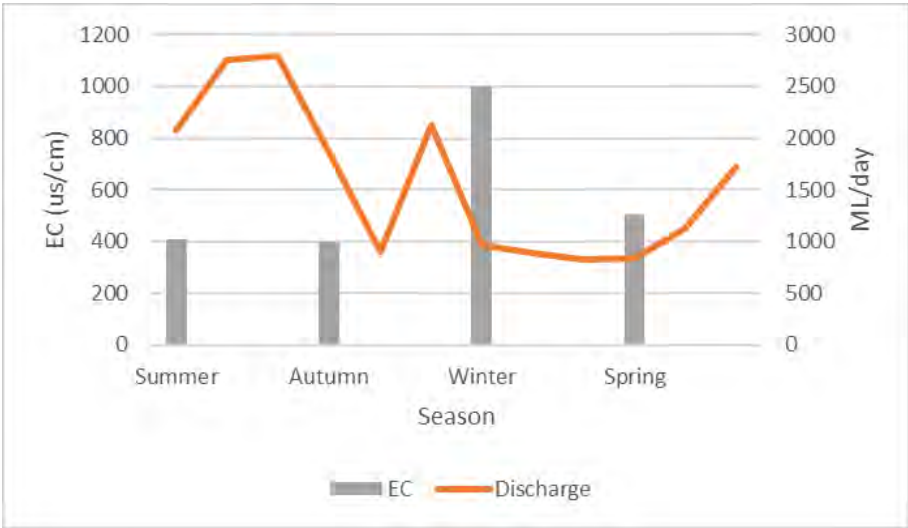
Appendix E Gauging station seasonality plots

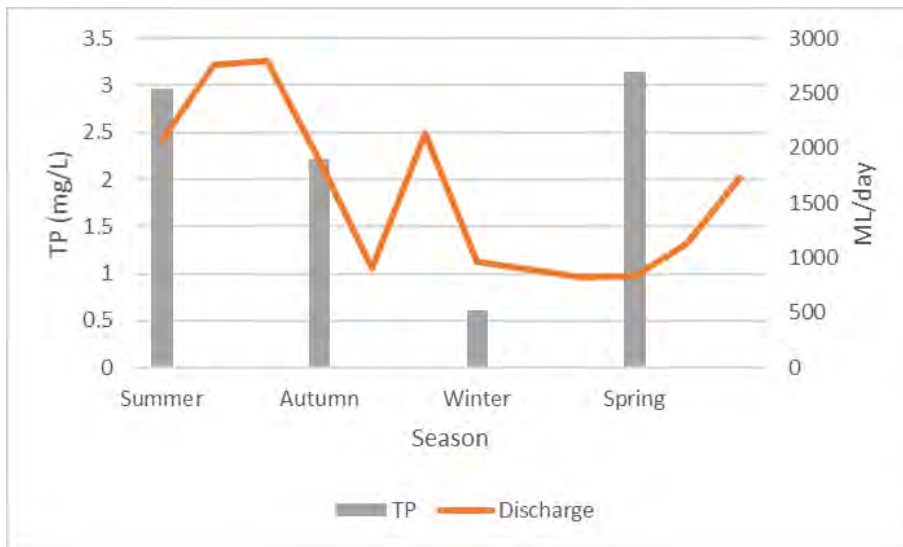
BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

Appendix E

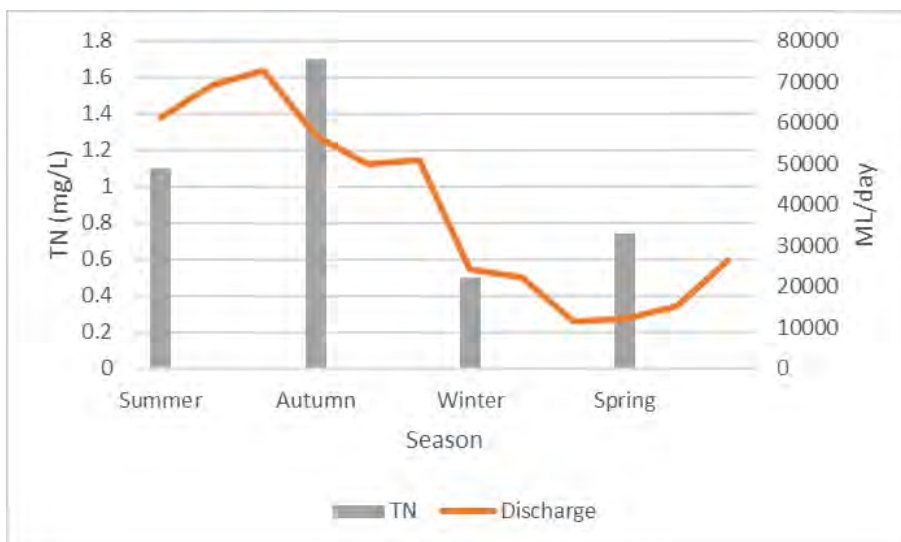
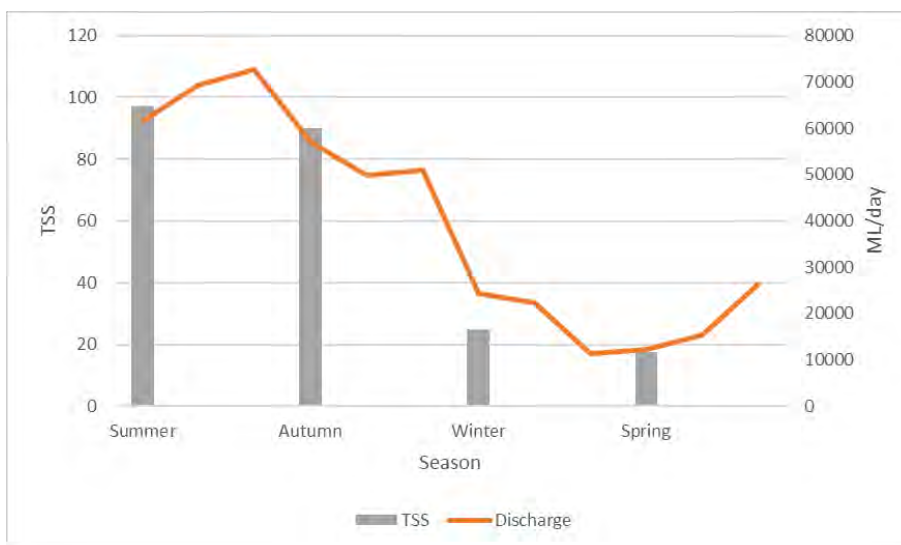
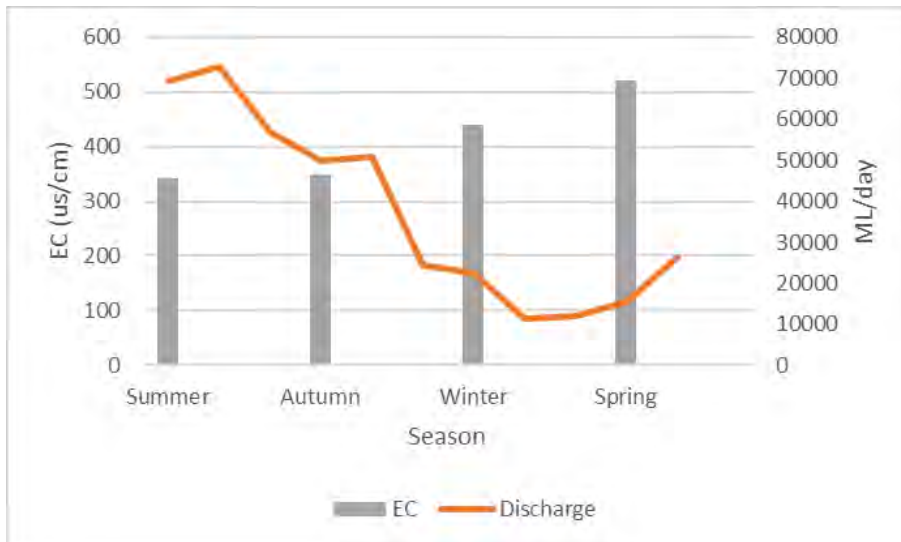
Gauging station seasonality plots

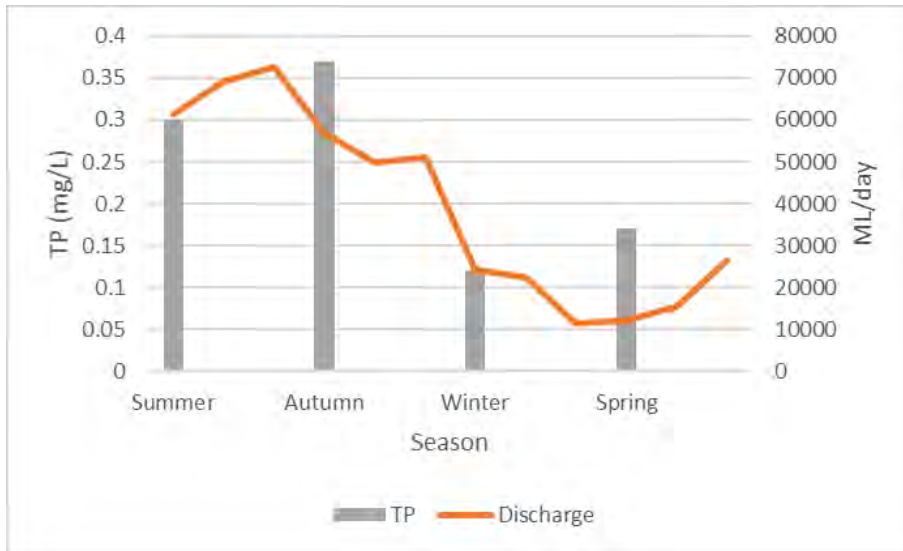
Gowrie Creek at Oakey



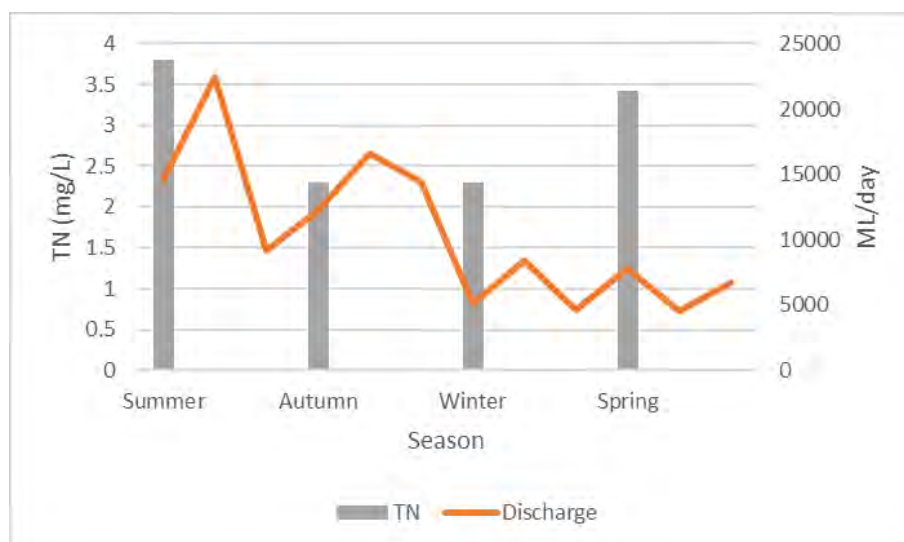
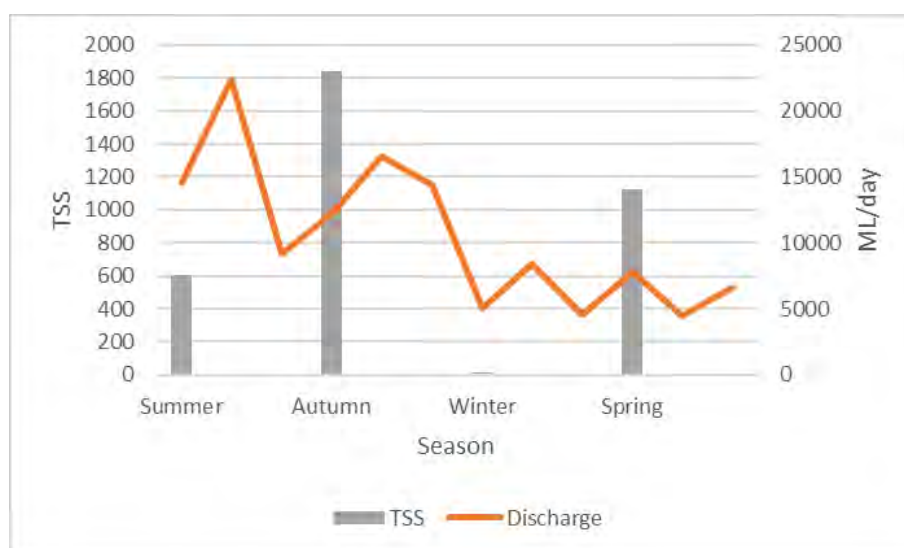
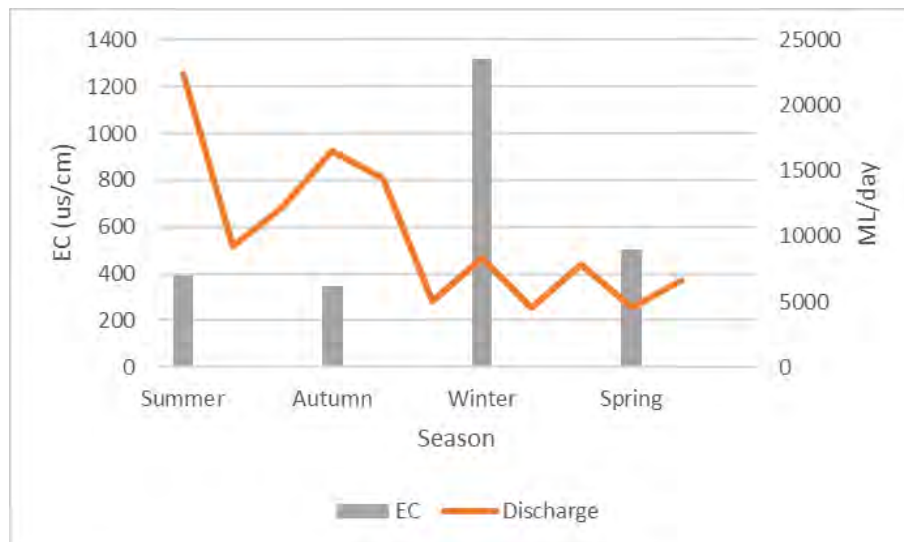


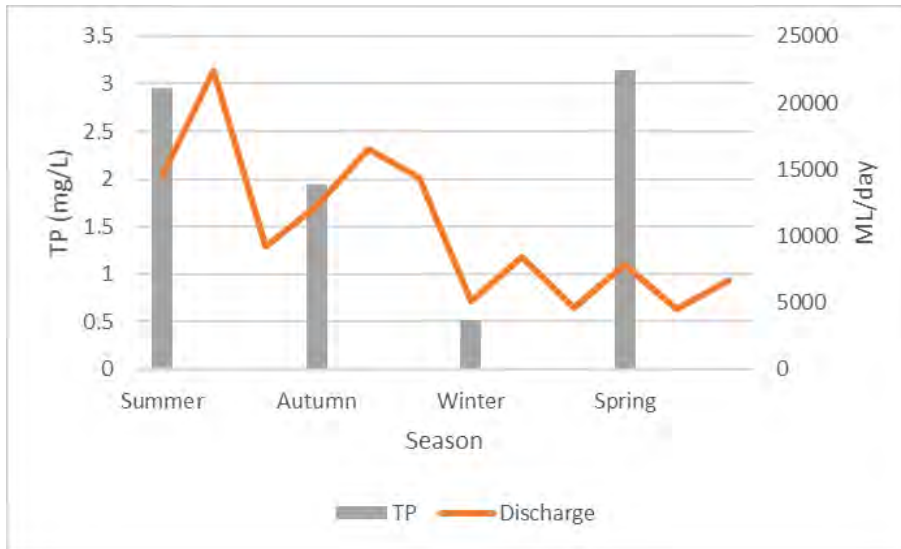
Condamine River at Tummalville



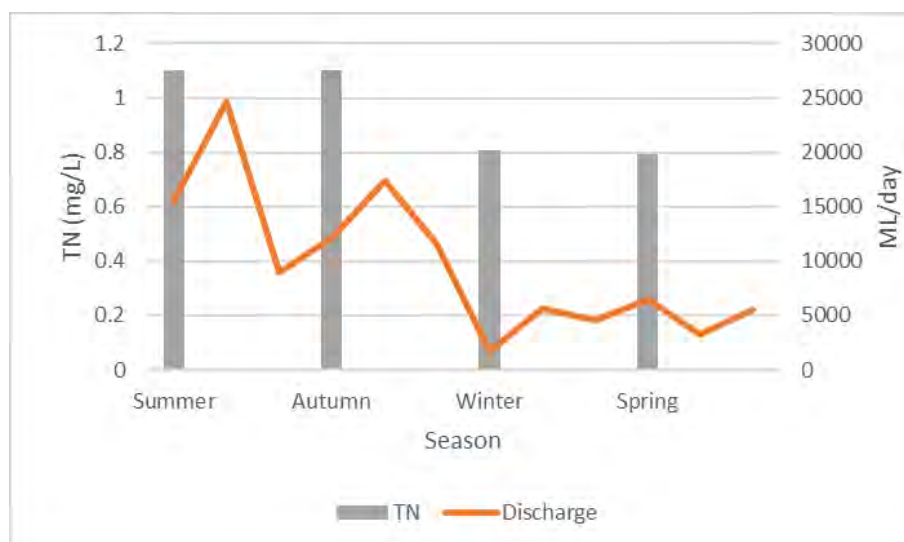
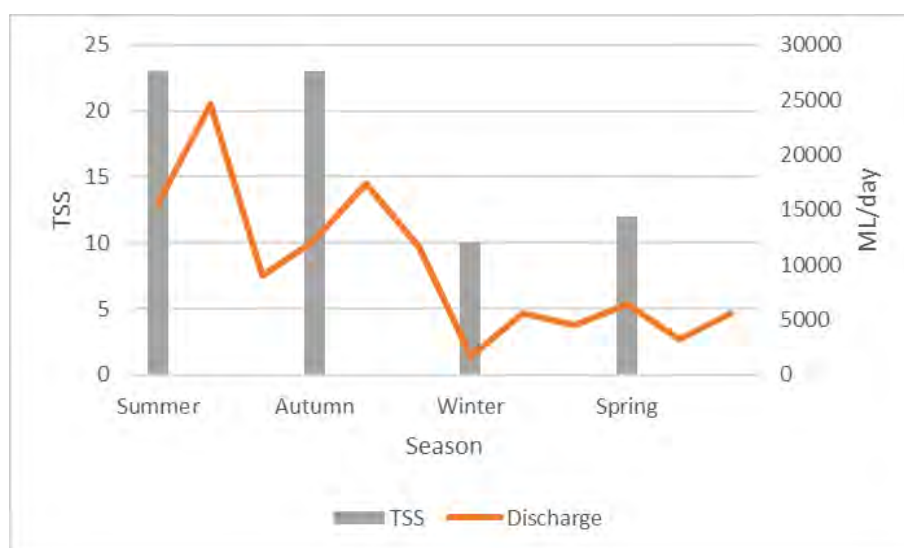
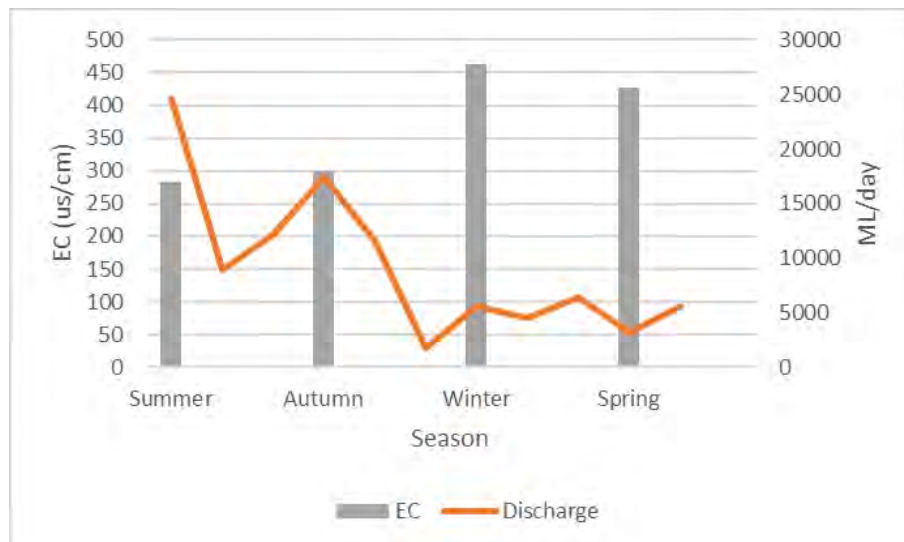


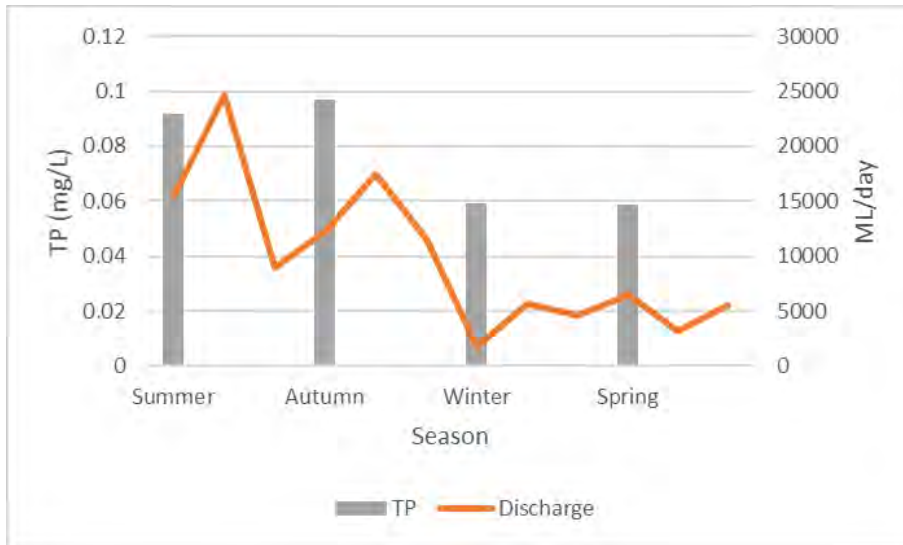
Macintyre Brook at Inglewood





Macintyre Brook at Booba Sands





APPENDIX S

Surface Water Quality Technical Report

Appendix F Artificial waterbodies within impact assessment area

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

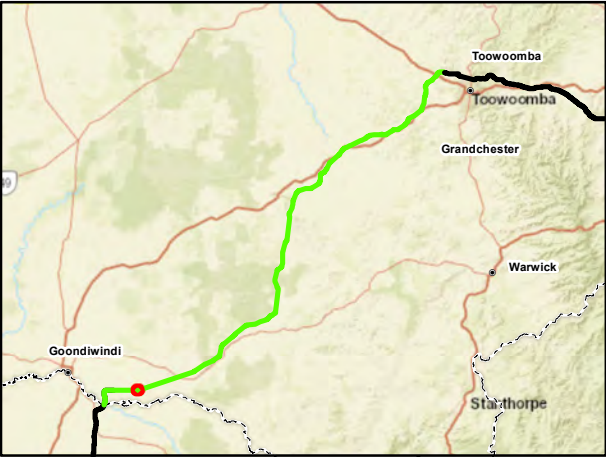
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Legend

- 5 Chainage (km)
- Existing rail
- NSW/QLD border to Gowrie alignment
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(a):

Artificial waterbodies which intersect with the Project disturbance area

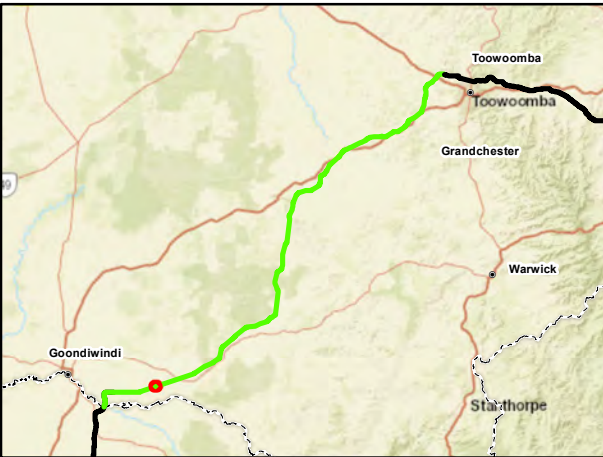
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Legend

- 5 Chainage (km)
- Existing rail
- NSW/QLD border to Gowrie alignment
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(b):

Artificial waterbodies which intersect with the Project disturbance area

Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FF\IV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- Localities
- Existing rail
- NSW/QLD border to Gowrie alignment
- Major roads
- Minor roads
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500

0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(c):

Artificial waterbodies which intersect with the Project disturbance area

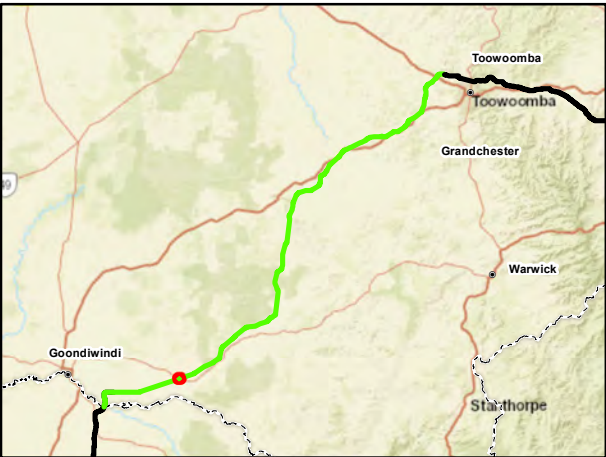
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Legend

- 5 Chainage (km)
- Existing rail
- NSW/QLD border to Gowrie alignment
- Major roads
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(d):

Artificial waterbodies which intersect with the Project disturbance area

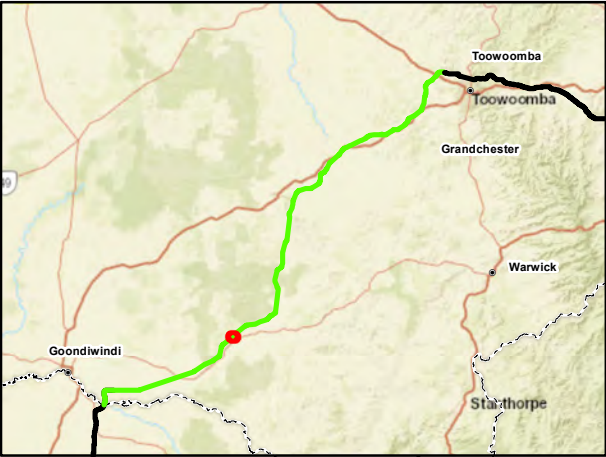
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:5,000
0 0.035 0.07 0.105 0.14 0.175km



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NSW/QLD border to Gowrie

Appendix F(e):

Artificial waterbodies which intersect with the Project disturbance area

Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFIV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(f):

Artificial waterbodies which intersect with the Project disturbance area

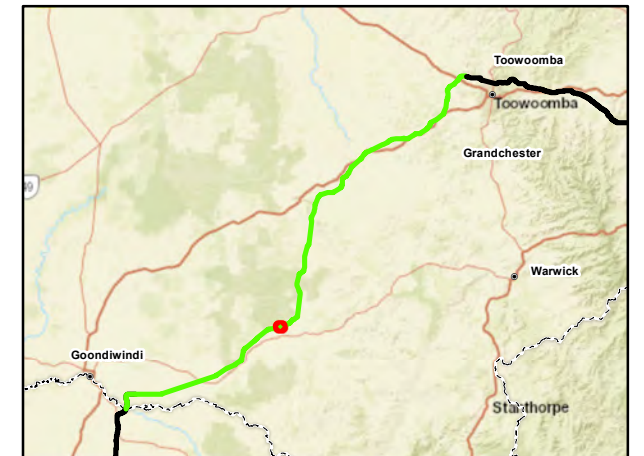
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km

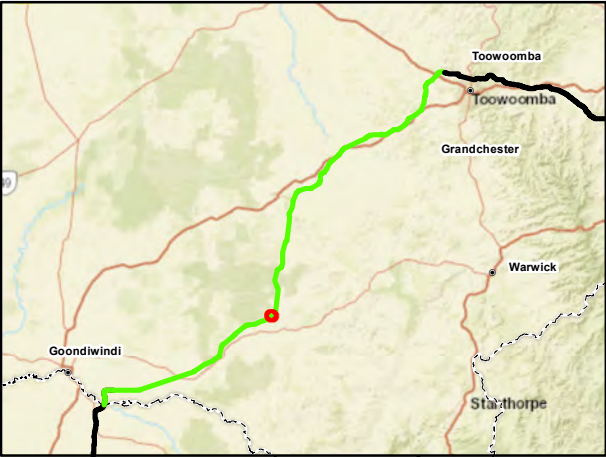
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(h):

Artificial waterbodies which intersect with the Project disturbance area

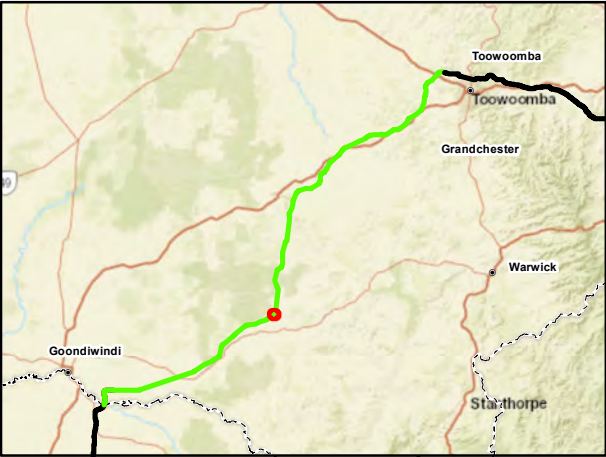
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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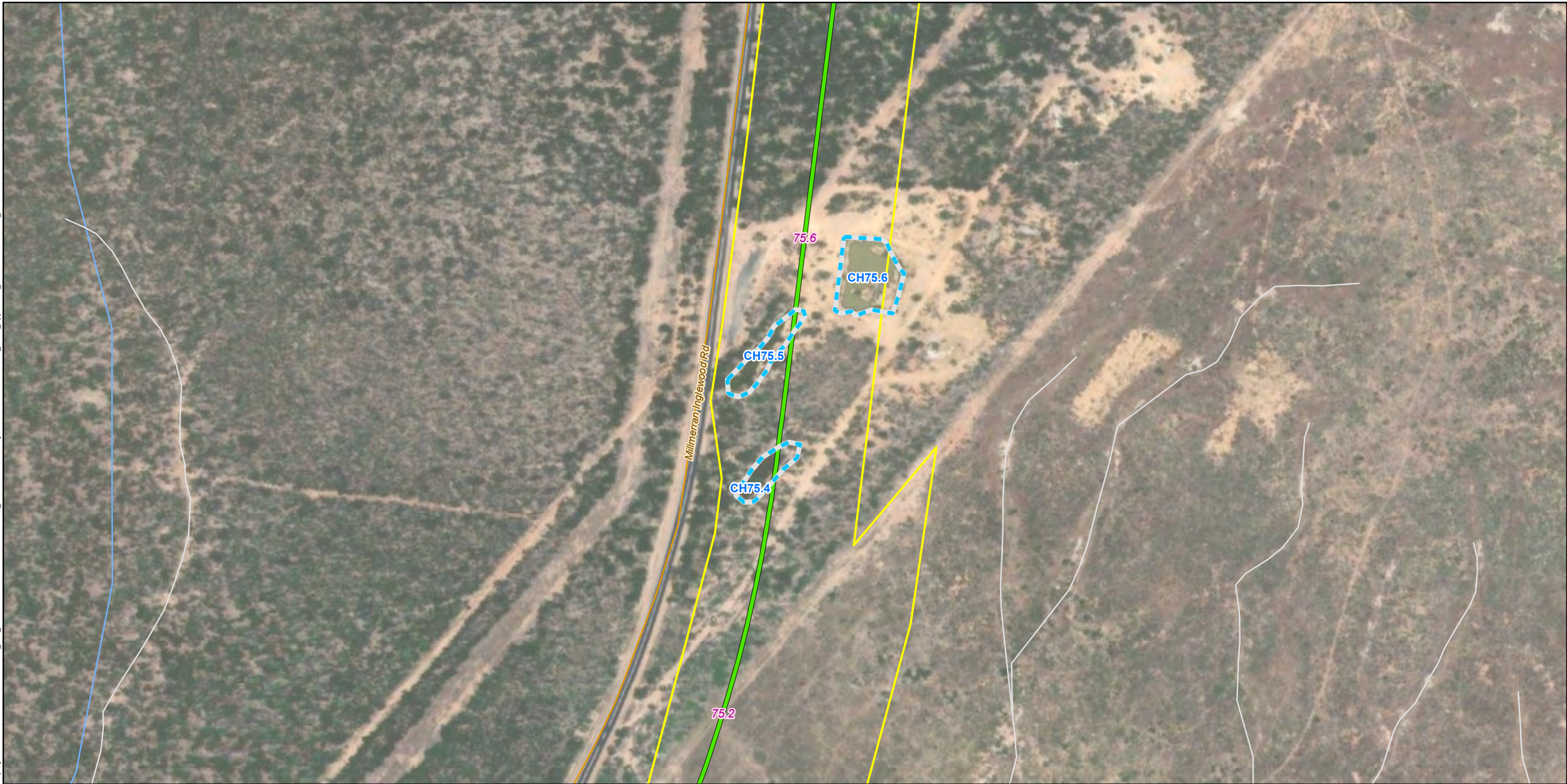
Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(i):

Artificial waterbodies which intersect with the Project disturbance area

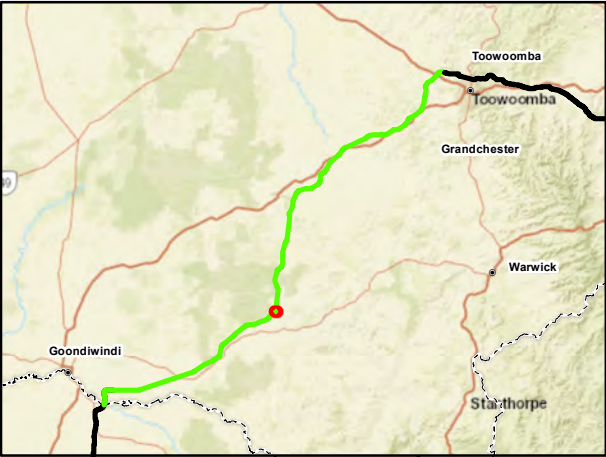
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(j):

Artificial waterbodies which intersect with the Project disturbance area

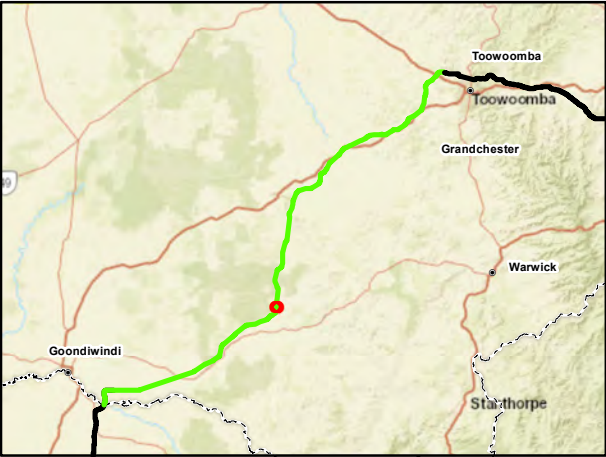
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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Integrating Community, Environment and Engineering

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NSW/QLD border to Gowrie

Appendix F(k):

Artificial waterbodies which intersect with the Project disturbance area

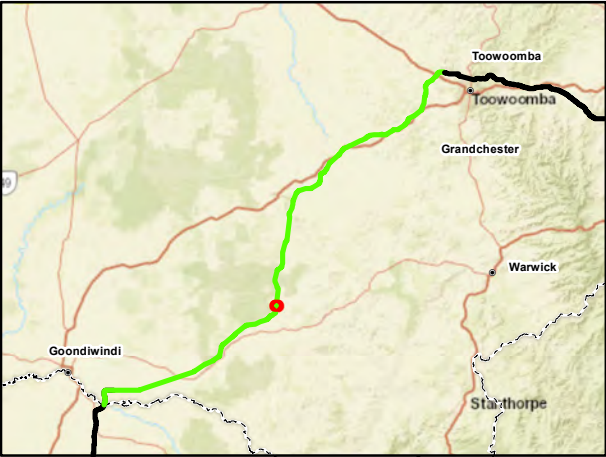
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Artificial / constructed waterbodies
- Project footprint
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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(I):

Artificial waterbodies which intersect with the Project disturbance area

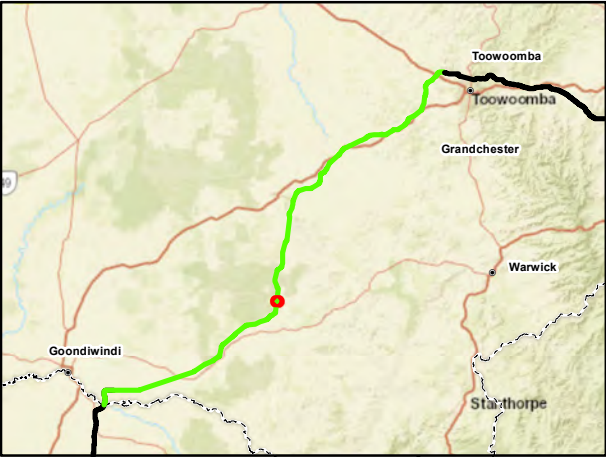
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Legend

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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



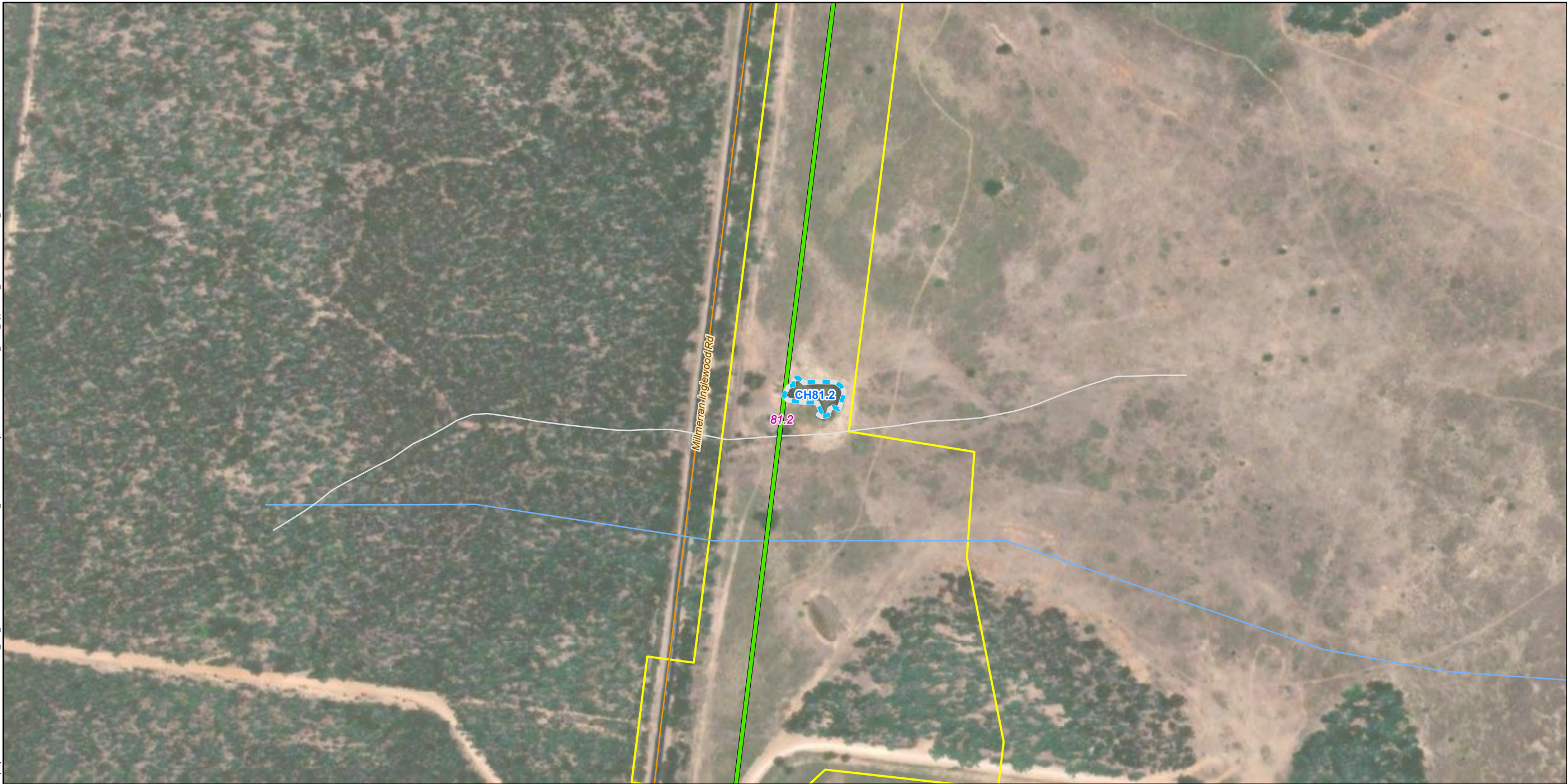
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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(m):

Artificial waterbodies which intersect with the Project disturbance area

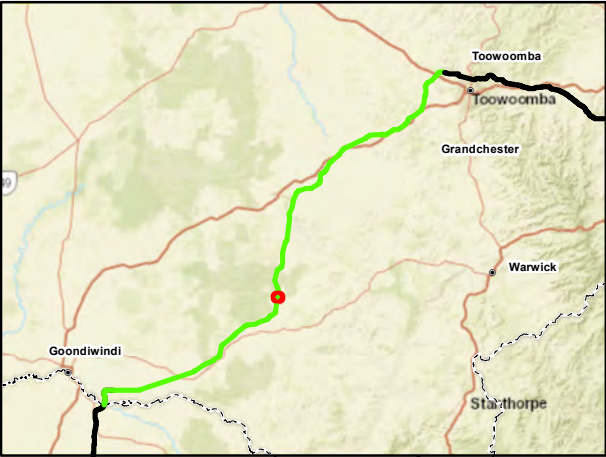
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Legend

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- NSW/QLD border to Gowrie alignment
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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(n):

Artificial waterbodies which intersect with the Project disturbance area

Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(o):

Artificial waterbodies which intersect with the Project disturbance area

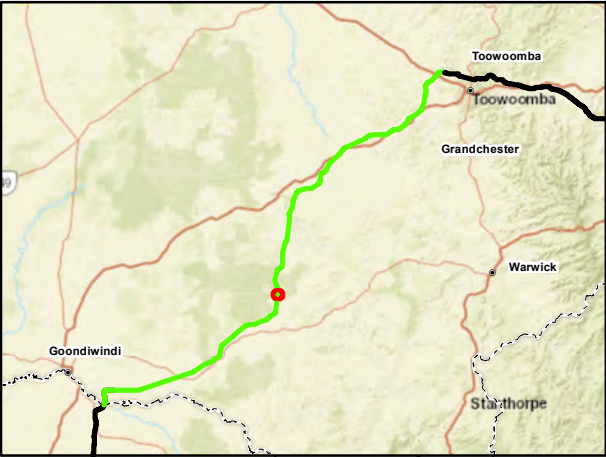
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Legend

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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(p):

Artificial waterbodies which intersect with the Project disturbance area

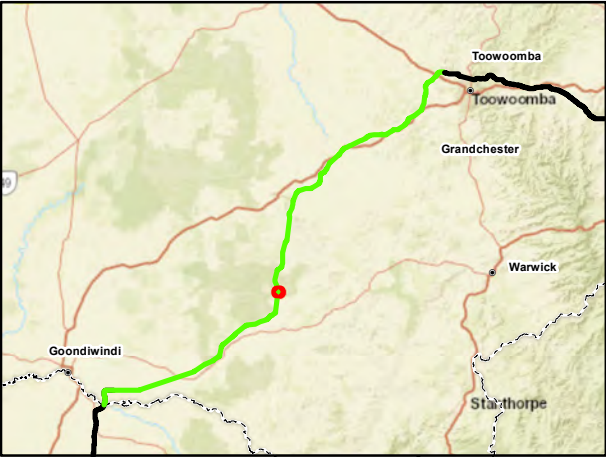
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(q):

Artificial waterbodies which intersect with the Project disturbance area

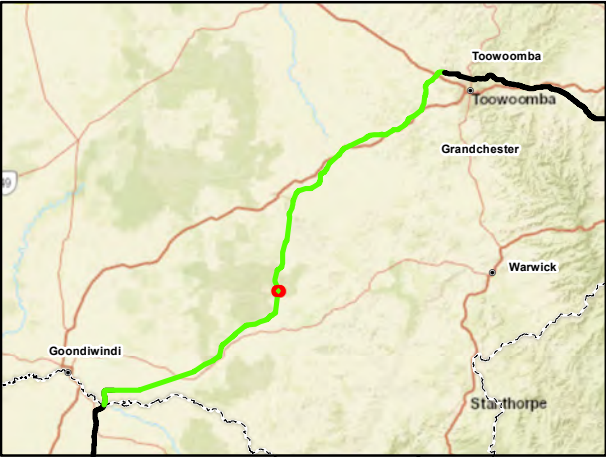
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
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- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,000
0 0.02 0.04 0.06 0.08 0.1km



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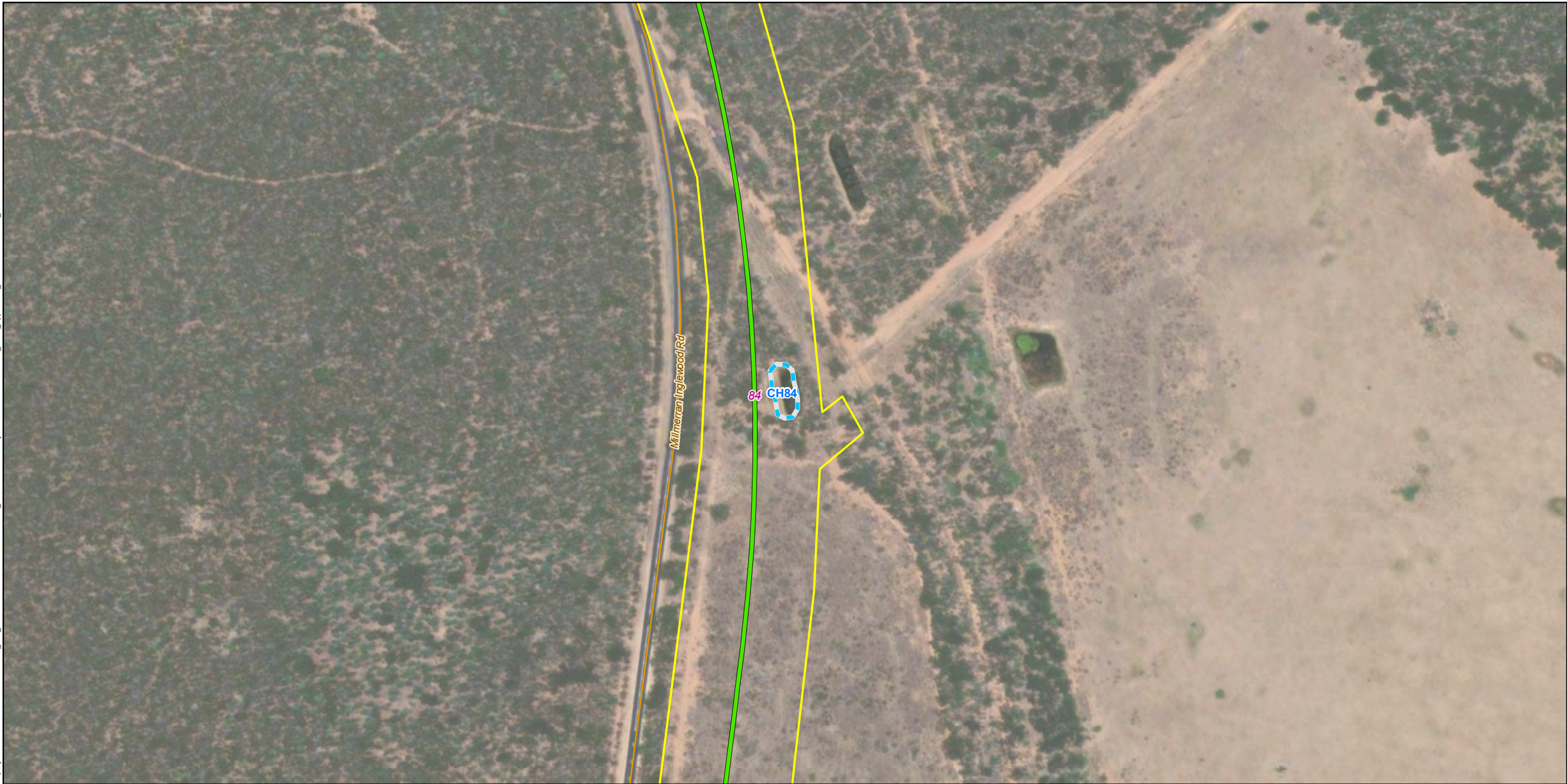
Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(r):

Artificial waterbodies which intersect with the Project disturbance area

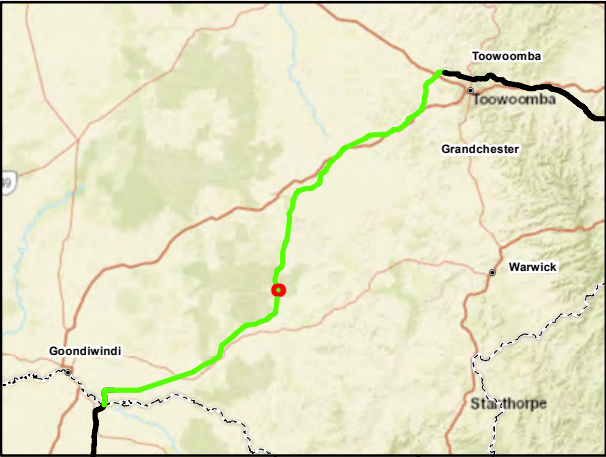
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Artificial / constructed waterbodies
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Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,000
0 0.02 0.04 0.06 0.08 0.1 km



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NSW/QLD border to Gowrie

Appendix F(s):

Artificial waterbodies which intersect with the Project disturbance area

Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(t):

Artificial waterbodies which intersect with the Project disturbance area

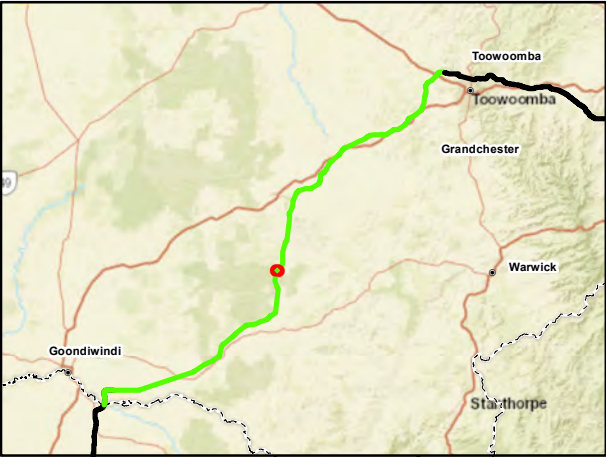
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(u):

Artificial waterbodies which intersect with the Project disturbance area

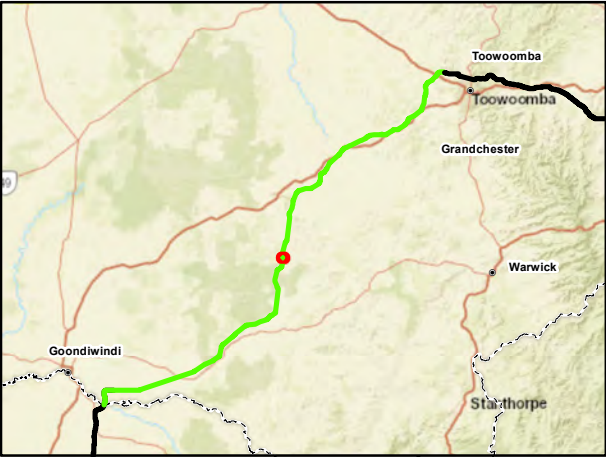
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(v):

Artificial waterbodies which intersect with the Project disturbance area

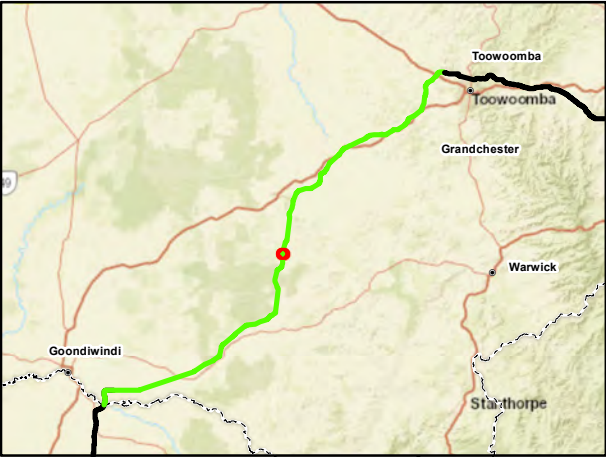
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\0101214_SurfaceWaterQuality\310-EAP-2019\0101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(w):

Artificial waterbodies which intersect with the Project disturbance area

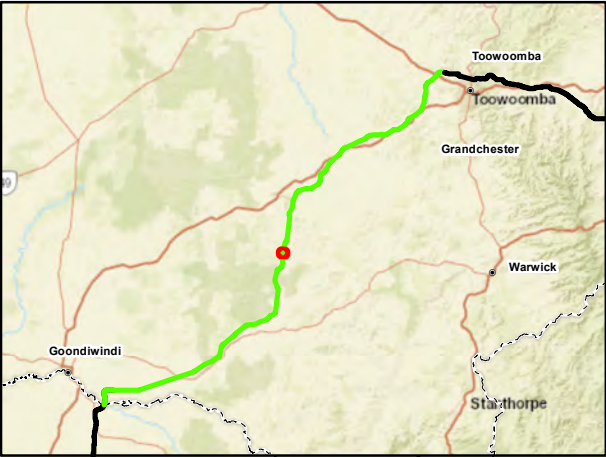
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFIV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(x):

Artificial waterbodies which intersect with the Project disturbance area

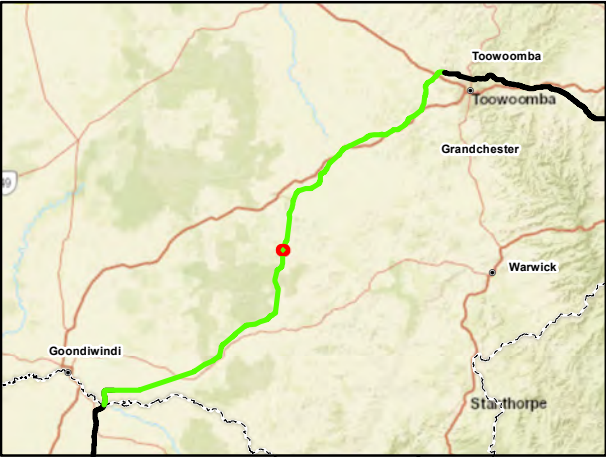
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FF\IV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(y):

Artificial waterbodies which intersect with the Project disturbance area

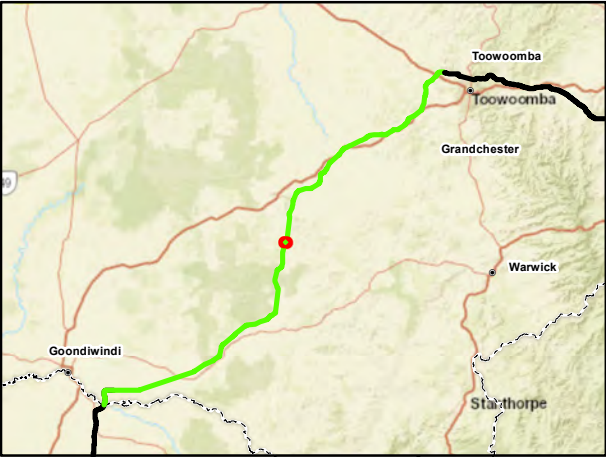
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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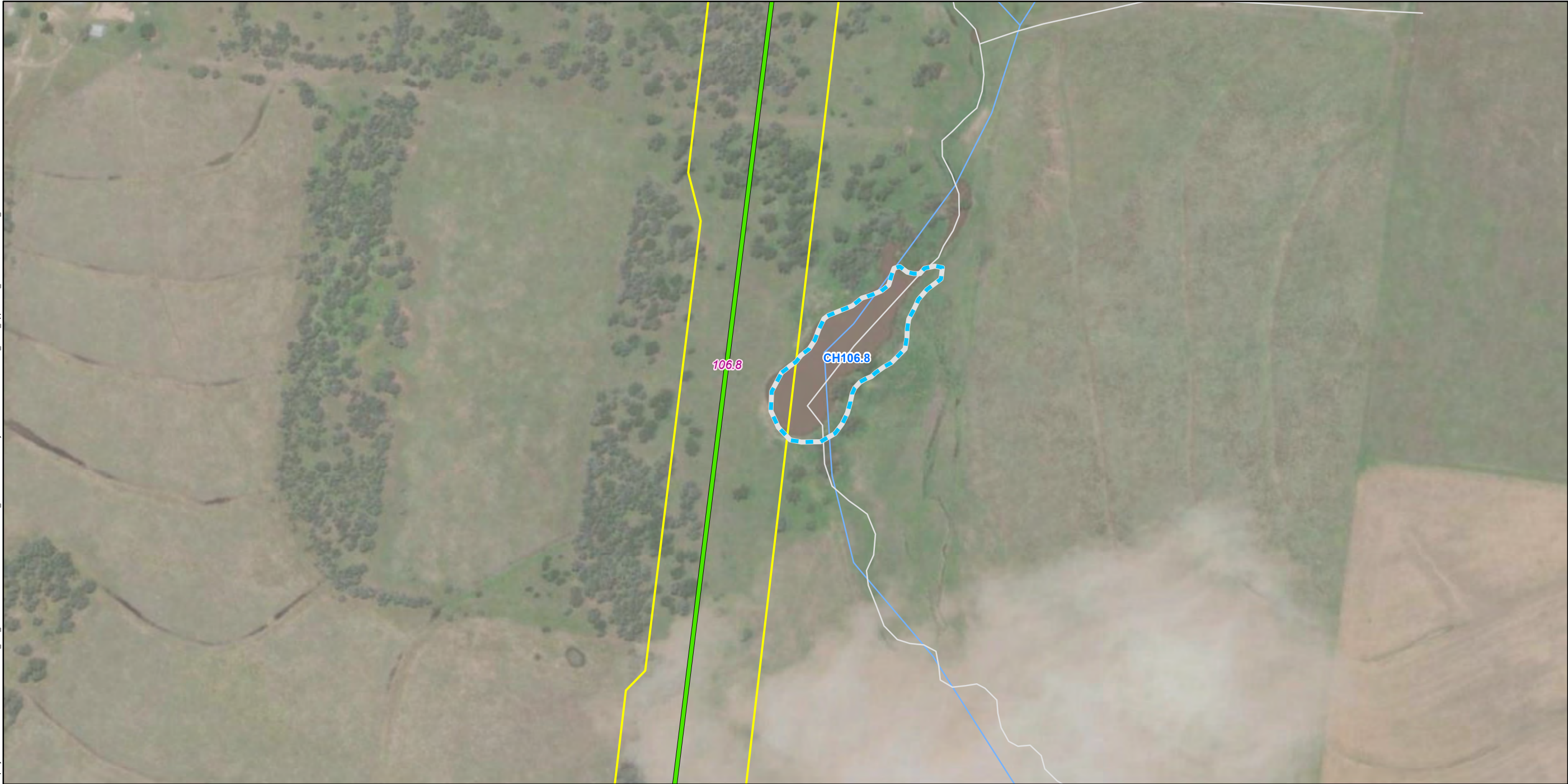
Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(z):

Artificial waterbodies which intersect with the Project disturbance area

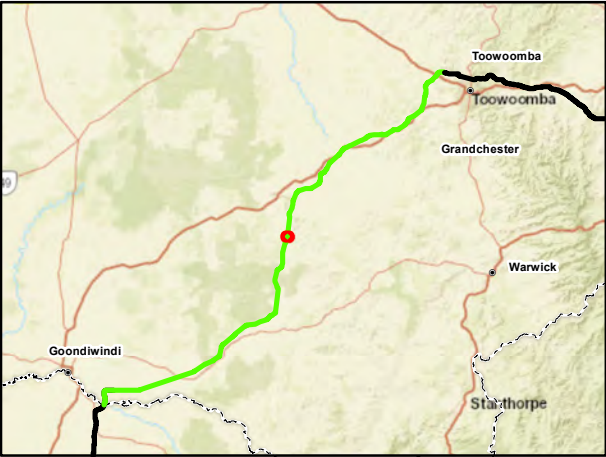
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(aa):

Artificial waterbodies which intersect with the Project disturbance area

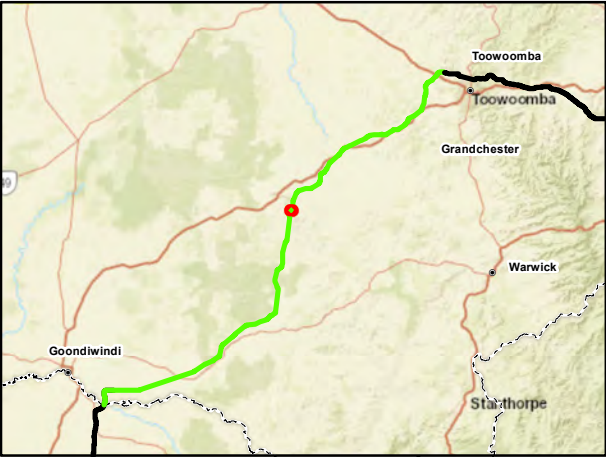
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFIV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



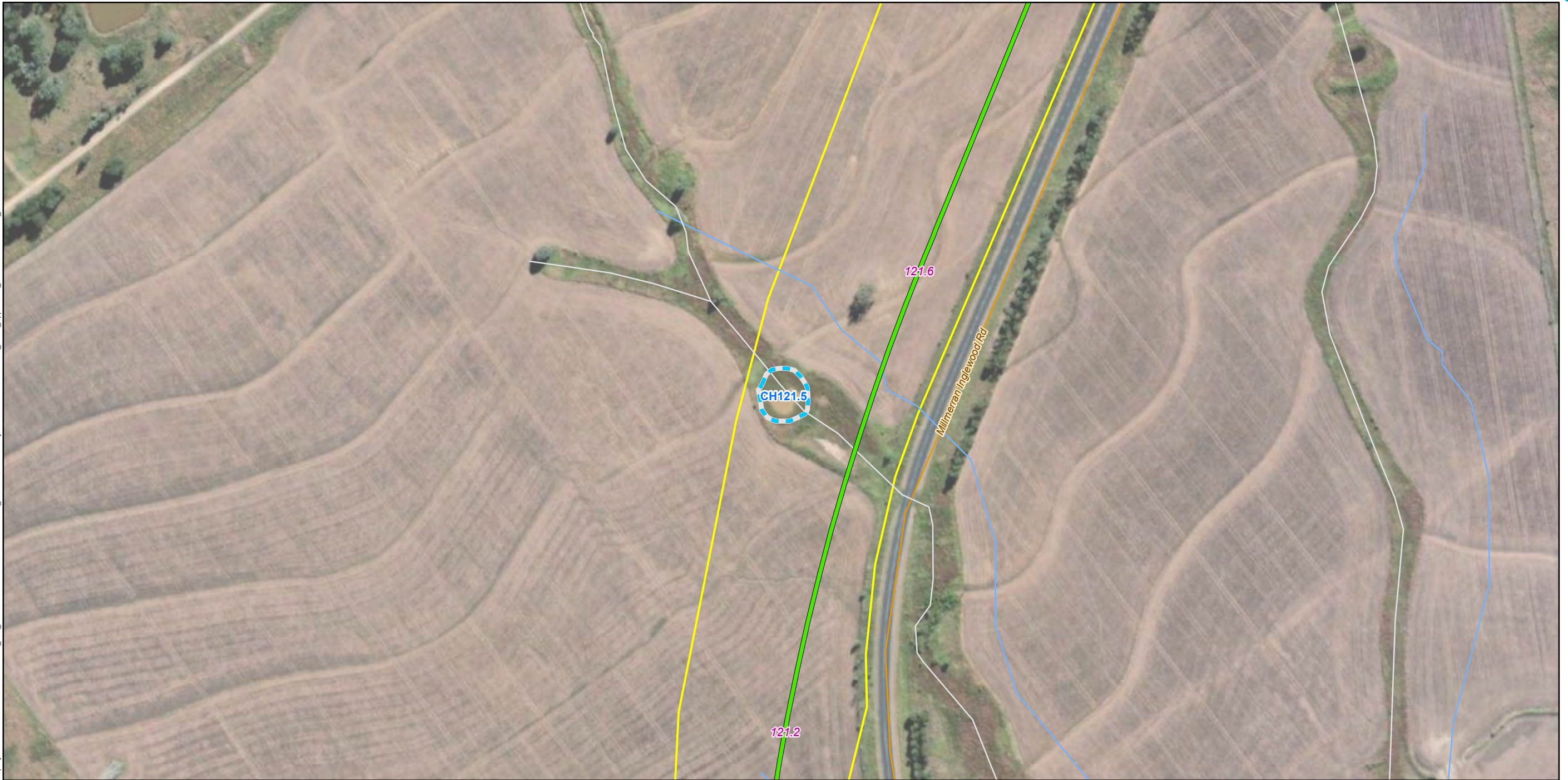
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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(ab):

Artificial waterbodies which intersect with the Project disturbance area

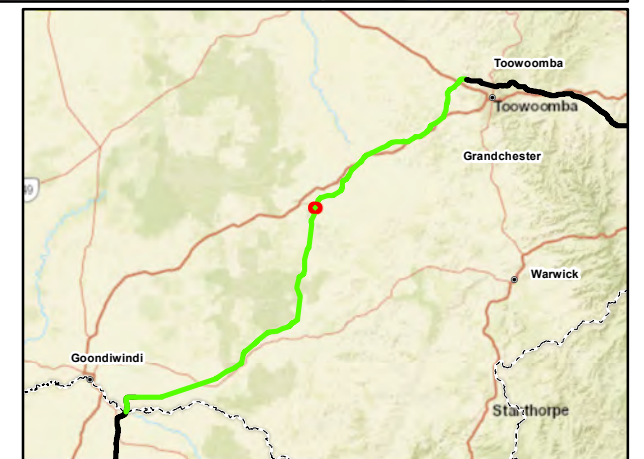
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(ac):

Artificial waterbodies which intersect with the Project disturbance area

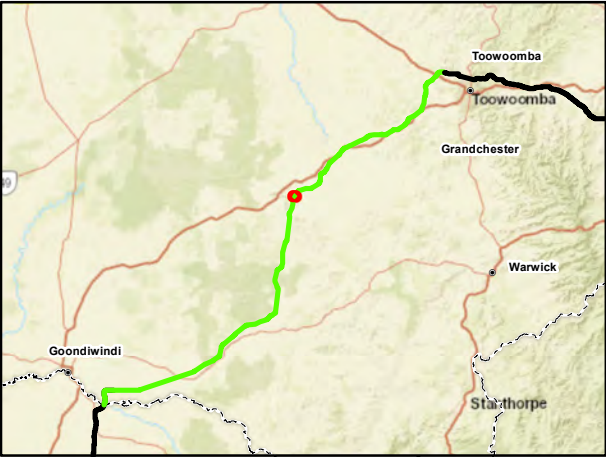
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



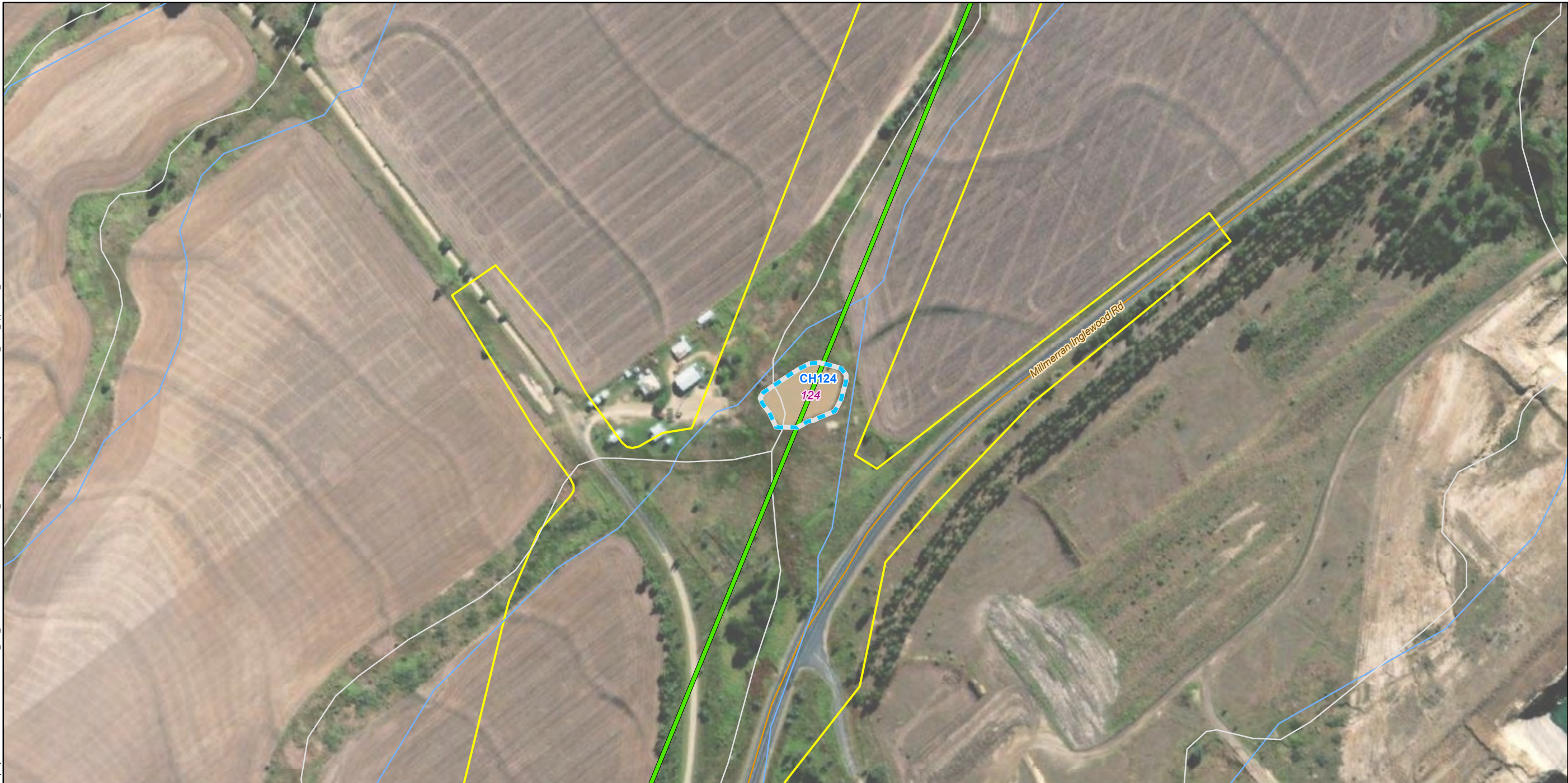
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NSW/QLD border to Gowrie
Appendix F(ad):

Artificial waterbodies which intersect with the Project disturbance area

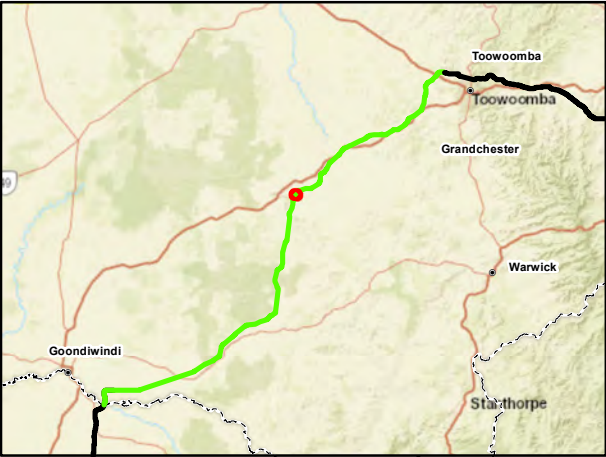
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(ae):

Artificial waterbodies which intersect with the Project disturbance area

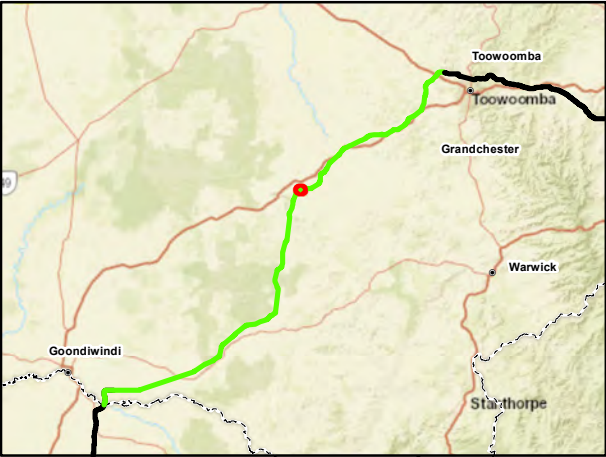
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FF\IV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



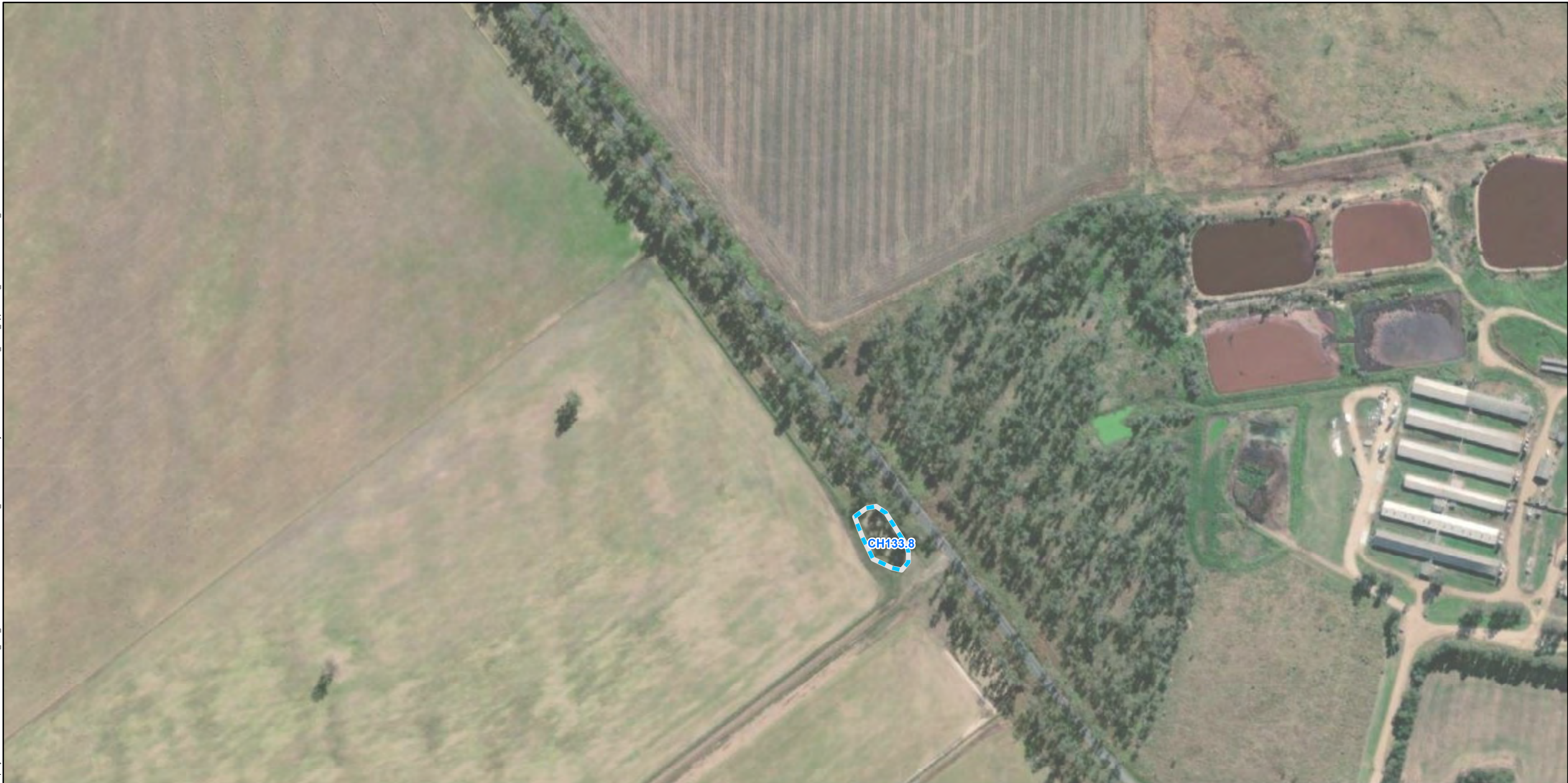
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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(af):

Artificial waterbodies which intersect with the Project disturbance area

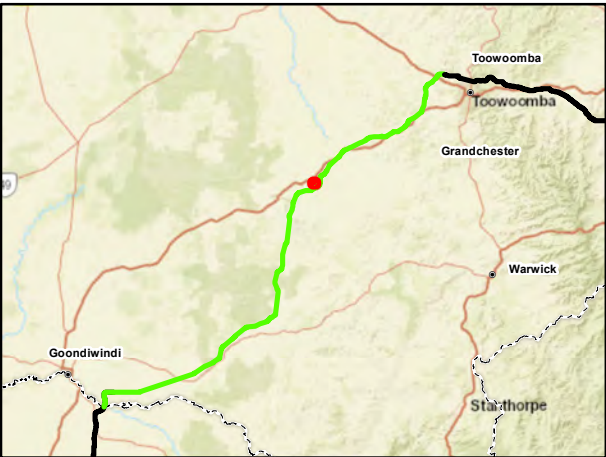
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- Artificial / constructed waterbodies

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(ag):

Artificial waterbodies which intersect with the Project disturbance area

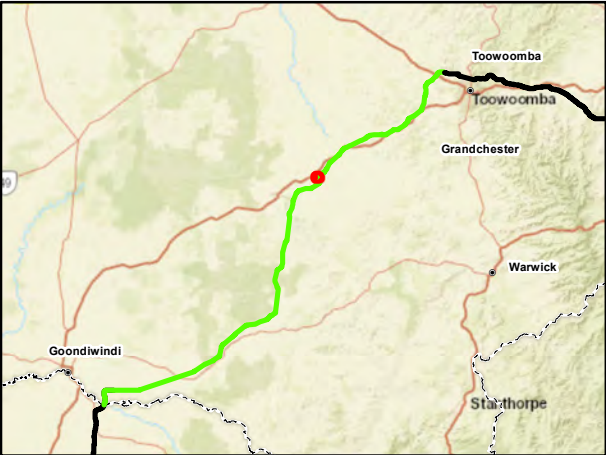
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Legend

- 5 Chainage (km)
- Artificial / constructed waterbodies
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(ah):

Artificial waterbodies which intersect with the Project disturbance area

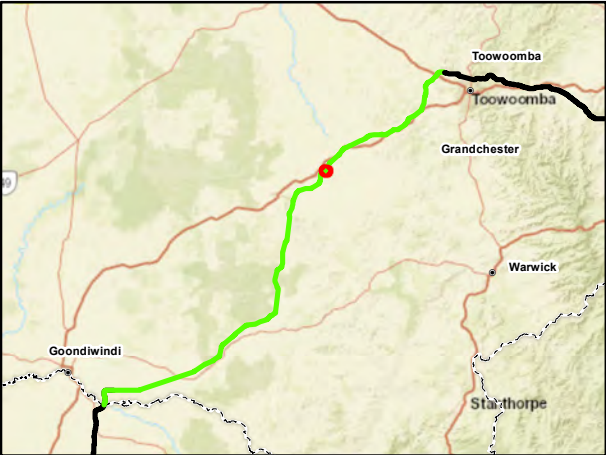
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(ai):

Artificial waterbodies which intersect with the Project disturbance area

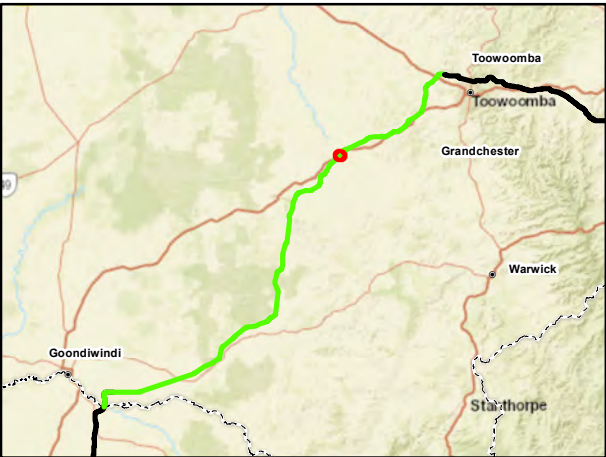
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Major roads
- Defined watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie

Appendix F(a):

Artificial waterbodies which intersect with the Project disturbance area

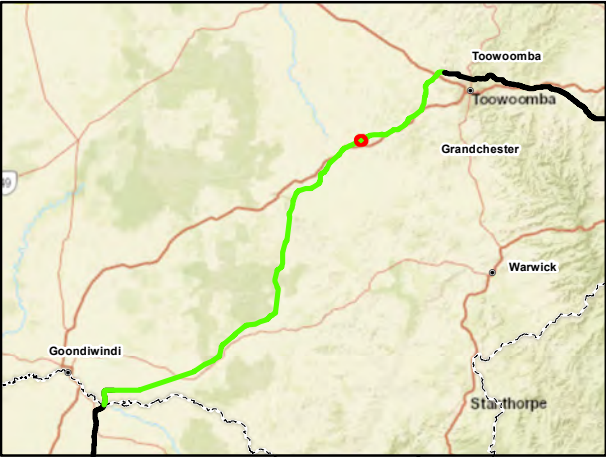
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- Existing rail
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(ak):

Artificial waterbodies which intersect with the Project disturbance area

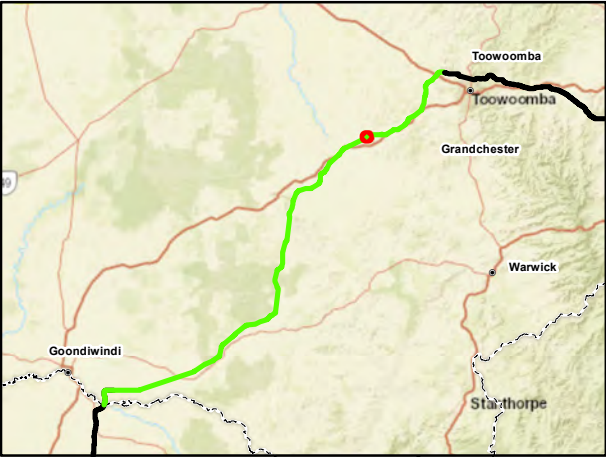
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- Existing rail
- NSW/QLD border to Gowrie alignment
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(al):

Artificial waterbodies which intersect with the Project disturbance area

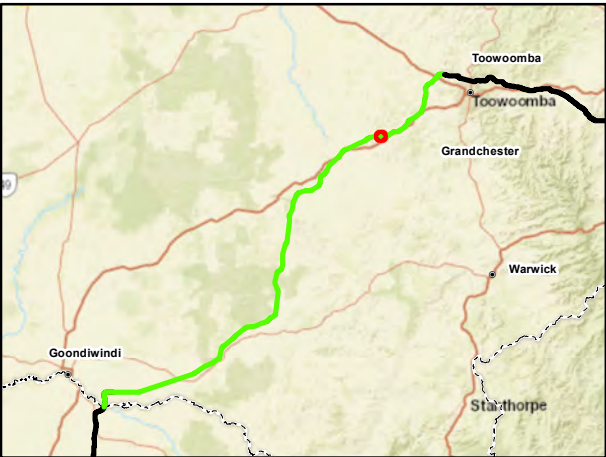
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(am):

Artificial waterbodies which intersect with the Project disturbance area

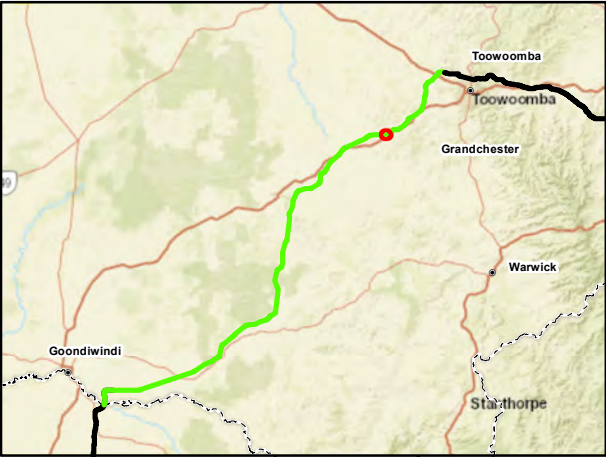
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Major roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(an):

Artificial waterbodies which intersect with the Project disturbance area

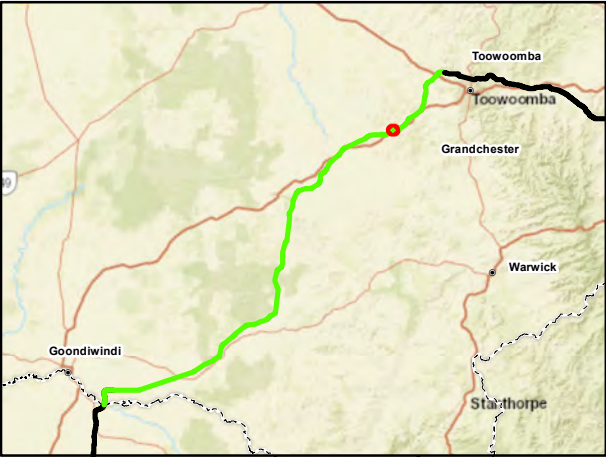
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FF\IV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Major roads
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



Future Freight
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Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(ao):

Artificial waterbodies which intersect with the Project disturbance area

Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Major roads
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



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NSW/QLD border to Gowrie
Appendix F(ap):

Artificial waterbodies which intersect with the Project disturbance area

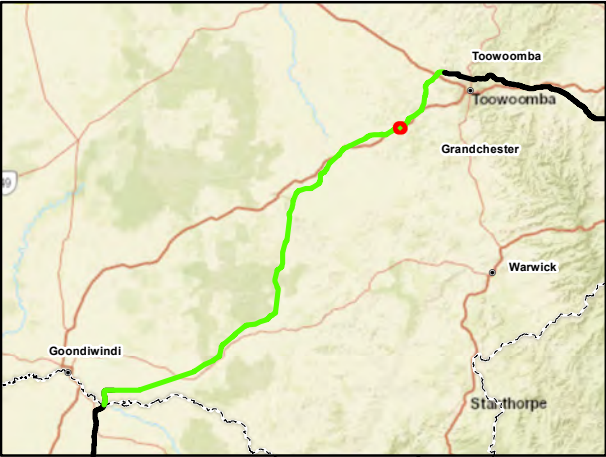
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Legend

- 5 Chainage (km)
- Existing rail
- NSW/QLD border to Gowrie alignment
- Major roads
- Minor roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

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0 0.025 0.05 0.075 0.1 0.125 km



Future Freight
Integrating Community, Environment and Engineering

Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(aq):

Artificial waterbodies which intersect with the Project disturbance area

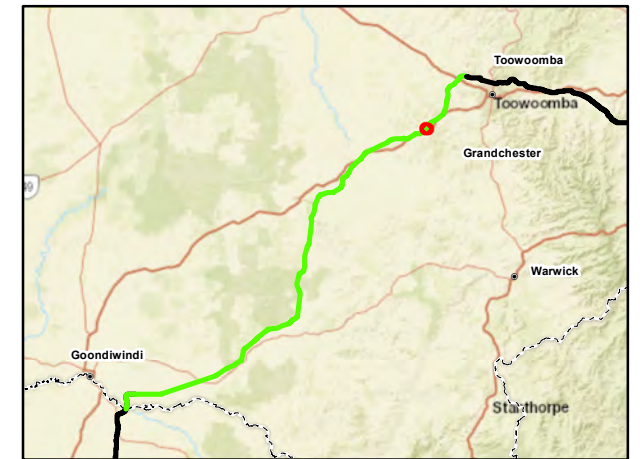
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- Existing rail
- NSW/QLD border to Gowrie alignment
- Major roads
- Unmapped watercourses (Water Act 2000)
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A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(ar):

Artificial waterbodies which intersect with the Project disturbance area

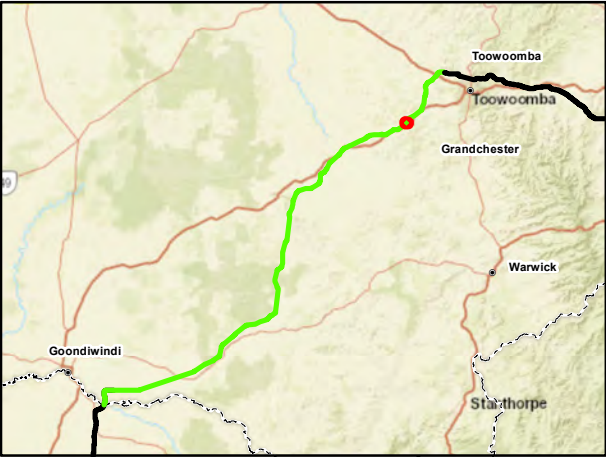
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



Future Freight
Integrating Community, Environment and Engineering

Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(as):

Artificial waterbodies which intersect with the Project disturbance area

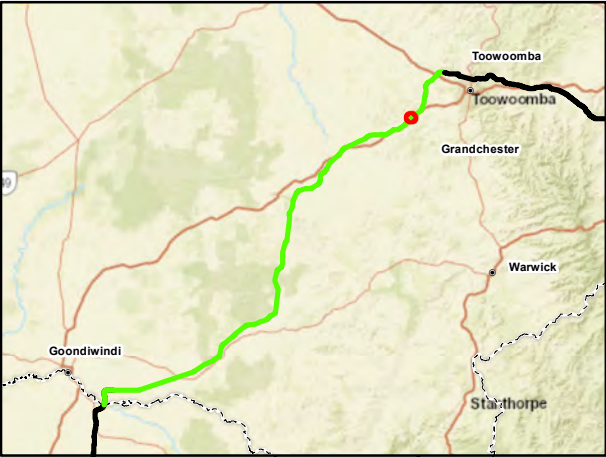
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Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(at):

Artificial waterbodies which intersect with the Project disturbance area

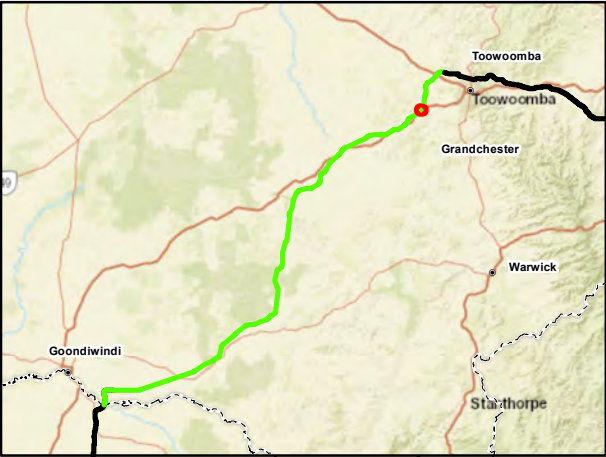
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Major roads
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

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Future Freight
Integrating Community, Environment and Engineering

Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(au):

Artificial waterbodies which intersect with the Project disturbance area

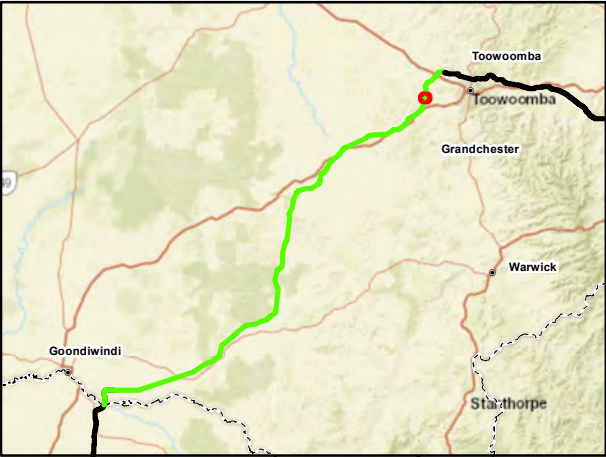
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



Future Freight
Integrating Community, Environment and Engineering

Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie
Appendix F(av):

Artificial waterbodies which intersect with the Project disturbance area

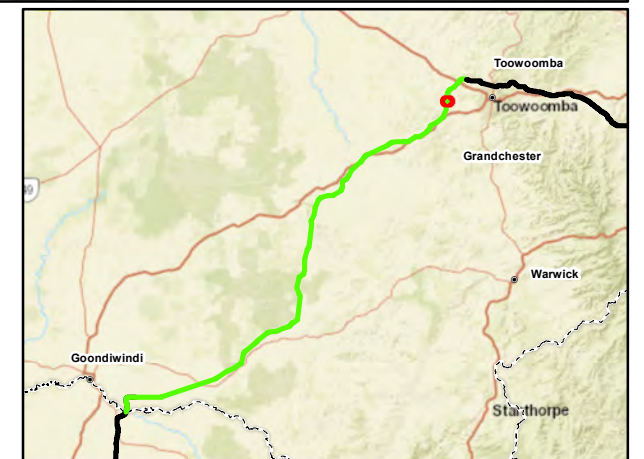
Map by: RBMEF/DTH/LTM Z:\GIS\GIS_310_B20\Tasks\310-EAP-2019\10101214_SurfaceWaterQuality\310-EAP-2019\10101214_FFJV_AppendixF_ArtificialWaterbodies_v5.mxd Date: 18/12/2023 17:37



Legend

- 5 Chainage (km)
- NSW/QLD border to Gowrie alignment
- Unmapped watercourses (Water Act 2000)
- Artificial / constructed waterbodies
- Project footprint
- Surface water impact assessment area

Artificial waterbodies are presented here labelled to an approximate kilometre chainage for illustrative purposes and for cross-referencing within the report.



A3 scale: 1:3,500
0 0.025 0.05 0.075 0.1 0.125 km



Issue date: 18/12/2023 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

NSW/QLD border to Gowrie

Appendix F(aw):

Artificial waterbodies which intersect with the Project disturbance area

APPENDIX S

Surface Water Quality Technical Report

Appendix G Baseline water quality monitoring

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

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1 Introduction

This monitoring program has been developed to address the requirements for surface water quality sampling to enable site-specific water quality objectives to be developed for the Border to Gowrie (B2G) Inland Rail Project. This will establish the baseline surface water quality conditions against which environmental compliance during construction will be assessed for the Project. Water quality conditions were based on low and base flow conditions with the opportunistic inclusion of a high-flow event. The information gathered during this assessment will also assist in finalising the management plans for construction.

Site-specific objectives will be generated for slightly to moderately disturbed ecosystem (as per *Australian and New Zealand Environment and Conservation Council (ANZECC) and Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018* and will be guided by *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*. The use of *control* sites (instead of *reference* sites) throughout this monitoring program will be used to derive site-specific water quality objectives.

1.1 Monitoring program performance objectives

The objectives of the surface water quality monitoring program are as follows:

- Determine baseline conditions as a reference for monitoring of impact
- Enable site-specific water quality objective values to be developed
- Inform finalisation of the Surface Water Management Sub-plan for the construction phase of B2G.

1. Scope of document

This factual report was produced after the collection of twelve routine monitoring events and one high flow monitoring event. The report provides all water quality data obtained as part of these monitoring events and will compare water quality data performance against water quality objectives. Qualitative site characteristics of monitoring locations were also reviewed.

This document only provides a summary of the data and does not provide an assessment of this data to generate site specific objectives. The development of site specific objectives will occur within a separate report and detail the methodology and resulting objectives.

2 Field methodology

The monitoring program was designed to provide sufficient information for site-specific guideline values to be developed. The baseline water quality conditions were collated from non-continuous monitoring (beginning June 2018, ending December 2021). The monitoring program (anticipated 15 data values over two years with inclusion of data derived from the B2G EIS) will not meet the 18 data values over two years, as recommended by the *Queensland Water Quality Guidelines (QWQG)* 2009. Percentile estimates for interim guidelines can be derived from eight or more samples across representative environments (*QWQG* 2009). As such, the current program is expected to allow a reliable derivation of interim water quality objectives. The interim water quality objectives will be used to identify any impact from construction works. The interim water quality objectives may be supplemented, to allow for full calculation of water quality objectives, by additional water quality sampling before commencement of construction.

The guideline values will be derived from the best-available local monitoring sites (i.e. control sites), rather than reference sites. This is due to a) the potential for unimpacted reference sites (located a long distance from the works area) to result in unrealistic management goals and b) the proximity of site-specific sites to anticipated Project construction works and the intended use of the water quality objectives (i.e. short-term control of construction work impacts). The monitoring program methodology is further detailed below.

2.1 Surface water quality

2.1.1 Survey locations

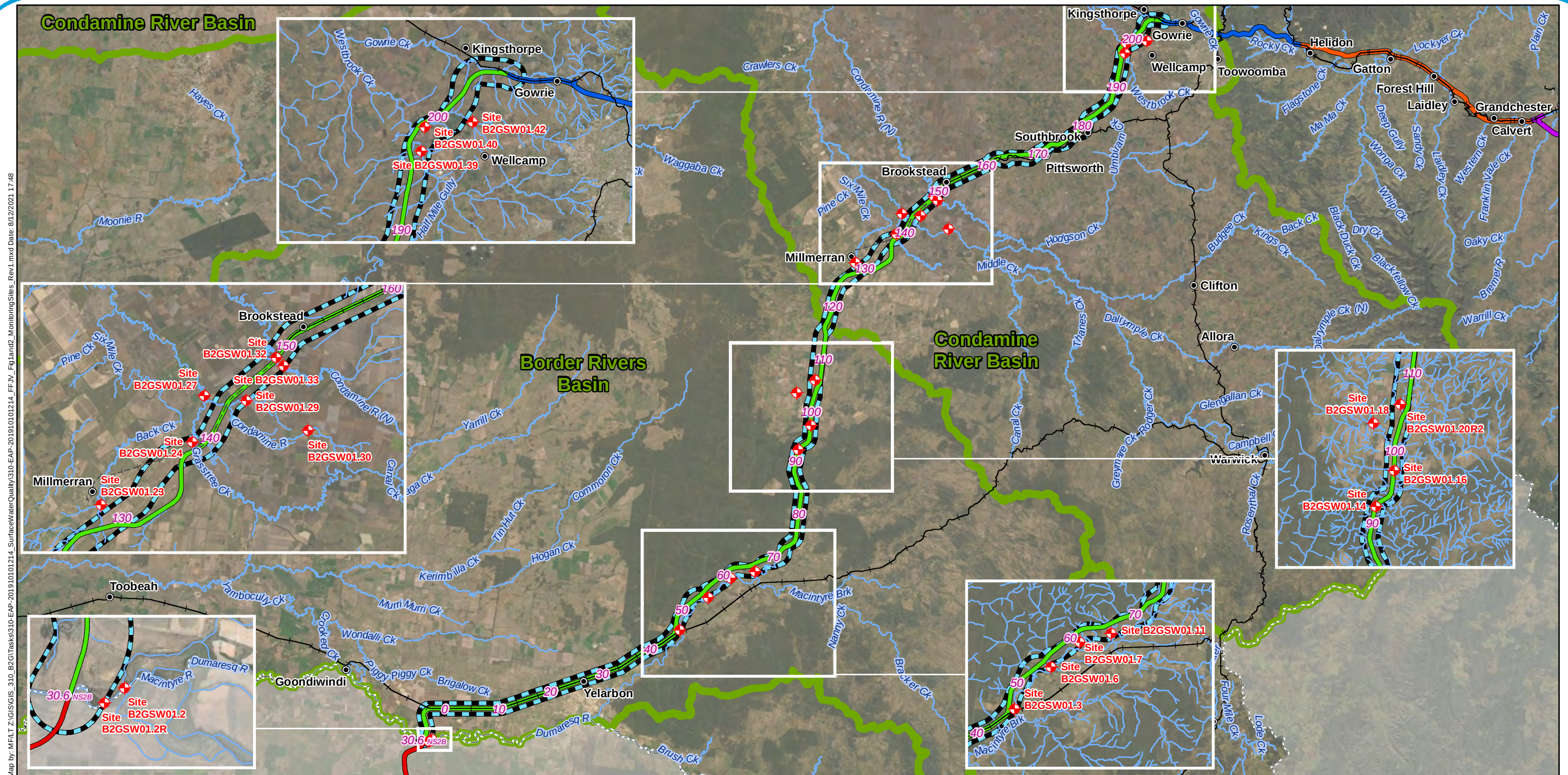
A total of 20 sites were investigated during the monitoring program and align with those proposed for surface water quality assessment in the B2G EIS (refer Table 2-1 and Figure 2-1). Monitoring sites were typically located on the following watercourses associated with the B2G Project:

- Macintyre River
- Macintyre Brook
- Canning Creek
- Nicol Creek
- Grasstree Creek
- Condamine River
- Condamine River (North Branch)
- Westbrook Creek
- Dry Creek

Table 2-1 Surface water quality and aquatic ecology monitoring sites

Site ID	Site location (zone 56J)		Waterway	Position
	Easting	Northing		
B2GSW01.2	252526.14 m E	6826589.54 m S	Macintyre River	2.3 km upstream of rail alignment
B2GSW01.2R	251992.66 m E	6826197.88	Macintyre River	1.5 km upstream of rail alignment
B2GSW01.3	297987.40 m E	6846544.39 m S	Macintyre Brook	900 m downstream of rail alignment
B2GSW01.6	303224.05 m E	6852534.59 m S	Macintyre Brook	1.2 km downstream of rail alignment

Site ID	Site location (zone 56J)		Waterway	Position
	Easting	Northing		
B2GSW01.7	307340.87 m E	6856089.27 m S	Macintyre Brook	1.3 km downstream of rail alignment
B2GSW01.11	311857.57 m E	6857333.54 m S	Canning Creek	1.3 km downstream of rail alignment
B2GSW01.14	319758.71 m E	6879596.17 m S	Unnamed waterway	10 m upstream of rail alignment
B2GSW01.16	322034.45 m E	6884153.22 m S	Unnamed waterway	20 m downstream of rail alignment
B2GSW01.18	319459.85 m E	6890038.43 m S	Unnamed waterway	3 km upstream of rail alignment
B2GSW01.20R2	322807.61 m E	6892338.29 m S	Nicol Creek	1.5 km downstream of rail alignment
B2GSW01.23	330232.23 m E	6913921.81 m S	Unnamed waterway	1.8 km upstream of rail alignment
B2GSW01.24	337772.29 m E	6919155.06 m S	Grasstree Creek	670 m upstream of rail alignment
B2GSW01.27	338748.32 m E	6922941.94 m S	Condamine River	2 km upstream of rail alignment
B2GSW01.29	342210.77 m E	6922517.08 m S	Unnamed waterway	900 m downstream of rail alignment
B2GSW01.30	347306.73 m E	6920094.77 m S	Condamine River	7 km downstream of rail alignment
B2GSW01.32	344676.97 m E	6926062.65 m S	Condamine River (North Branch)	20 m upstream of rail alignment
B2GSW01.33	345293.94 m E	6925389.04 m S	Condamine River (North Branch)	870 m downstream of rail alignment
B2GSW01.39	379694.11 m E	6952313.72 m S	Westbrook Creek	800 m downstream of rail alignment
B2GSW01.40	379972.90 m E	6954172.10 m S	Dry Creek	30 m downstream of rail alignment
B2GSW01.42	383710.24 m E	6954556.98 m S	Dry Creek	2.17 km downstream of rail alignment



2.1.2 Surface water quality monitoring timing

The timing of monitoring events as part of the monitoring program is provided in Table 2-2.

Table 2-2 Monitoring program schedule

Field survey task	Timing
Routine surface water quality field monitoring	14 – 17 December 2020
	19 – 21 January 2021
	23 - 25 February 2021
	13 – 15 April 2021
	05 - 07 May 2021
	26 - 28 May 2021
	22 nd – 24 th June 2021
	21 st – 23 rd July 2021
	24 th – 26 th August 2021
	21 st – 23 rd September 2021
	18 th – 20 th October 2021
	17 th – 19 th November 2021
High-flow (flood) event surface water quality field monitoring	23 - 25 March 2021

High-flow (flood) flow event monitoring is triggered by rainfall events and equivalent increases in flow of major watercourses associated with the B2G Project. These are identified under the environmental values and water quality objectives *EPP (Water and Wetland Biodiversity) 2019*. Due to the size of the Project, high flow was identified across three distinct waters; Oaky Creek catchment waters and Central Condamine catchment waters and Lower Macintyre Brook catchment waters. The high flow criteria were as follows:

- Oaky Creek catchment waters ≥ 0.9 m³/s (cumecs) at gauge 422350A – Oaky Creek at Fairview
- Central Condamine catchment waters - ≥ 0.3 m³/s at gauge 422334A – Kings Creek at Aides Bridge
- Lower Macintyre Brook catchment waters - ≥ 3.2 m³/s at gauge 416415A – Macintyre Brook at Booba Sands.

2.1.3 Water quality sampling

A suite of water quality parameters were selected for the assessment of the existing environmental condition in relation to anticipated activities and associated impacts from the Project.

A multi-probed, battery operated water quality meter (YSI Professional Plus) was used to measure physio-chemical parameters. The device was calibrated in the field prior to the collection of data and used to take measurements of the following parameters:

- Dissolved oxygen (DO) (mg/L) and saturation (per cent)
- pH
- Electrical conductivity (EC) (μ S/cm)
- Temperature (°C)
- Total dissolved solids (TDS) (ppm).

Qualitative data was collected to provide contextual supplementary information in relation to the water quality values. The following qualitative data was recorded:

- Time
- Water flow (none/low/mod/high/flood/dry)
- Optical clarity (clear/slight/turbid/opaque/other)
- Odour (normal/sewage/hydrocarbon/chemical)
- Surface condition (none/dust/oily/leafy/algae)
- Algae cover (none 0-5% cover / some – 6-25% cover / lots – 26-100% cover)
- Other visual observations/ comments (colour, fish, presence of litter)
- A photo and GPS point were collected from each sampling site.

2.1.4 Collection of water samples for laboratory analysis

Laboratory analysis of water samples is necessary for the measurement of physical and chemical parameters that could not otherwise be accurately or cost effectively measured using in-field methods. Surface water samples were collected in accordance with the Queensland Government Monitoring and Sampling Manual 2018: *Environmental Protection (Water) Policy 2009* (DES, 2018) which was current at the time of field assessment.

Surface water quality samples were collected using sampling containers prepared and provided by a National Association of Testing Authorities (NATA) accredited Laboratory. Nitrile gloves were worn during sampling and field teams refrained from smoking or handling sunscreens or other potential sources of sample contamination during the sampling period.

Water samples collected for the purpose of analysis for dissolved metals were filtered in the field through a 0.45 µm filter using a sterile syringe. Once collected, samples were immediately placed in a refrigerator or on ice in an esky and delivered with Chain of Custody forms to the selected NATA-accredited laboratory for analysis.

Surface water samples were collected from the monitoring locations listed in Table 2-1 and submitted to a NATA accredited laboratory, for analysis of the following water quality parameters in accordance with the *QWQG 2009*:

- Conductivity and salinity
- Total suspended solids
- Turbidity
- Total hardness as CaCO₃
- Nutrient suite (ammonia, nitrite, nitrate, total nitrogen, total Kjeldahl nitrogen (TKN), nitrogen oxides (NO_x), reactive phosphorus (as ortho P) and total P)
- Organic nitrogen
- Dissolved metals (eight metals suite: arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)
- Polyaromatic hydrocarbons (PAHs)
- Chlorophyll a.

2.1.5 Quality Assurance/Quality Control

The number of samples collected for Quality Assurance/Quality Control (QA/QC) purposes were dictated by the number of primary water samples collected. Table 2-3 provides the QA/QC sampling frequency adopted for the monitoring program which was guided by the Monitoring and Sampling Manual 2018.

The two QA/QC sample types adopted for the monitoring program consisted of:

- **Duplicate or triplicates:** duplicate or triplicate samples are obtained by splitting a sample into two or by taking subsamples from the collection container. They may also be collected in the field by sampling at exactly the same time and place. Duplicate results provide an estimate of the error associated with the subsampling/splitting process and laboratory analysis and are a measure of precision. Duplicate samples will be sent in as blind samples to the laboratory.
- **Field blanks:** used to estimate contamination of a sample during the collection procedure. Field blanks are prepared in the field in the same manner as the sample. A bottle is filled in the field with ultra-pure water, preservative is added (if required), and for example, if a sample is field filtered, the field blank will also be filtered.

Table 2-3 QA/QC sample frequency

Control Sample	Frequency of collection
Duplicates (triplicates)	Two field duplicates per field survey (One per 10 samples)
Field Blank	One per field team per trip or one per 20 samples.

3 Compliance with guidelines

The surface water quality samples were collected in accordance with the Queensland Monitoring and Sampling Manual (DES 2018). The Queensland Monitoring and Sampling Manual provides the common techniques, methods and standards for sample collection, handling, quality assurance and control, custodianship and data management, for use by Queensland Government agencies, relevant persons and other organisations. These were adhered to during the implementation of the B2G water quality monitoring program.

The Queensland Monitoring and Sampling Manual is consistent with the nationally adopted framework presented in the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018* and provides procedures for the following:

- Sampling design
- Sampling in the field:
 - Taking in situ tests and water quality measurements
 - Taking samples for water quality assessments
 - Preserving and storing samples for water quality assessments
 - Security and transport of samples
- Arranging laboratory analysis
- QA/QC protocols
- Data analysis and interpretation.

4 QA/QC Review

4.1 Field QA/QC

The following field QA/QC measures were implemented:

- Nitrile disposable gloves were worn during sampling and replaced at each site.
- Unpreserved sample containers were rinsed with sample water three times and filled to the appropriate level. Sample containers containing preservatives were filled directly with sample water (i.e. without rinse cycle).
- Samples were kept chilled until delivered to the NATA accredited Eurofins depot as soon as practicable.

A split duplicate/triplicate sample (a second and/ or third sample collected simultaneously) was collected for quality assurance purposes, as required. The duplicate samples were labelled as 'Duplicate' to ensure they went to the laboratory as a 'blind sample'. Analytical results for the duplicate and triplicate were compared to the primary sample results using Relative Percentage Difference (RPD) calculations. Calculated RPD values of 50% or less are typically considered acceptable, and are also dependant on concentrations of analyte in reference to the laboratory assessment's limit of reporting. Qualification of the RPD's identified that results were typically of a 'good' data value. Instances of a drop in data quality were identified for the following parameters per site and month:

- B2G 1.11 Turbidity (June 2021)
- B2G 1.2R Turbidity (July 2021)
- B2G 1.39 Turbidity (August 2021)
- B2G 1.40 Turbidity (October 2021)

In addition to the duplicate and triplicate samples, field blank samples were collected in order to qualify data quality. Field blanks were typically of high quality with minor contamination noted during several monitoring events. Fair quality data was recorded for the May 2021 and October 2021 assessment of Total Nitrogen and Total Kjeldahl Nitrogen.

4.2 Laboratory QA/QC

Laboratory analysis was undertaken by Eurofins which is NATA accredited. The QA/QC laboratory results indicate that the data is of acceptable quality for reporting purposes.

The ALS Interpretive Quality Control Report identified no outliers for:

- Laboratory controls
- Matrix spikes
- Surrogate recovery (for regular sample matrices)
- Analysis holding time.

5 Reporting and Data

5.1 General Site Information

Sites were routinely assessed each month to determine any qualitative features affecting water quality. The features recorded include:

- Time
- Water flow (none/low/mod/high/flood/dry)
- Clarity (clear/slight/turbid/opaque/other)
- Odour (normal/sewage/hydrocarbon/ chemical)
- Surface condition (none/dust/oily/leafy/algae)
- Algae cover (none/some/lots)
- Climatic conditions (current weather conditions)
- Other visual observations/ comments (colour, fish, presence of litter).

Site photos (as visual indications of qualitative features) are presented in Appendix A. Further general site characteristics are provided in Appendix B.

5.2 Summary of Data

Water quality samples were collected continually from a majority of monitoring sites throughout the monitoring program. Total number of samples obtained over the monitoring period for each site are detailed in Table 5-1.

Where samples were not collected, these were due to:

- Dry conditions (Non-representative water or no water)
- Landholder access issues
- TRC road permit issues.

Table 5-1 Summary of water quality sampling undertaken during monitoring program

Timing	Site sampled (i.e. representative water available)	Site not-sampled (i.e. dry, access issues, TRC road permit issues)
Routine Monitoring		
14 – 17 December 2020	7	13
19 – 21 January 2021	17	3
23 - 25 February 2021	14	6
13 – 15 April 2021	18	2
05 - 07 May 2021	18	2
26 - 28 May 2021	19	1
22 nd – 24 th June 2021	17	3

21 st – 23 rd July 2021	16	4
24 th – 26 th August 2021	17	3
21 st – 23 rd September 2021	15	5
18 th – 20 th October 2021	14	6
17 th – 19 th November 2021	17	3
High flow event		
23 - 25 March 2021	15	5
Total	204	56

5.3 Antecedent conditions prior to surface water quality sampling

Antecedent conditions identify periods of high surface water discharge on Macintyre Brook and Condamine River catchments during March and April, and, in the Macintyre Brook catchment during July and November. (refer Table 5-2 and Figure 5-1). The high surface water flow is mirrored in the higher than average rainfall during the period (refer Figure 5-2, Figure 5-3, Figure 5-4 and Figure 5-5).

Table 5-2 Average flow for preceding 7 days and monitoring event

Timing	Macintyre Brook at Booba Sands stream flow (average M/L per day)	Condamine River at Tummalville stream flow (average M/L per day)	Gowrie Creek at Oakey stream flow (average M/L per day)
Routine Monitoring			
14 – 17 December 2020	65.49	0.00	60.09
19 – 21 January 2021	33.97	78.47	54.96
23 - 25 February 2021	1.98	0.00	16.97
13 – 15 April 2021	351.50 ^a	674.04	25.36
05 - 07 May 2021	12.37	115.01	95.37
26 - 28 May 2021	9.80	119.28	25.73
22 nd – 24 th June 2021	68.61	52.57	27.93
21 st – 23 rd July 2021	1,326.00 ^a	872.62	30.45

24 th – 26 th August 2021	34.11	74.31	47.12
21 st – 23 rd September 2021	44.63	11.87	22.95
18 th – 20 th October 2021	44.74	15.28	101.87
17 th – 19 th November 2021	371.81 ^a	566.62	42.82
Flood flow event			
23 - 25 March 2021	8,833.63 ^a	15,421.39 ^a	476.08

Table note:

^a denotes high flow event as identified in Section 2.1.2

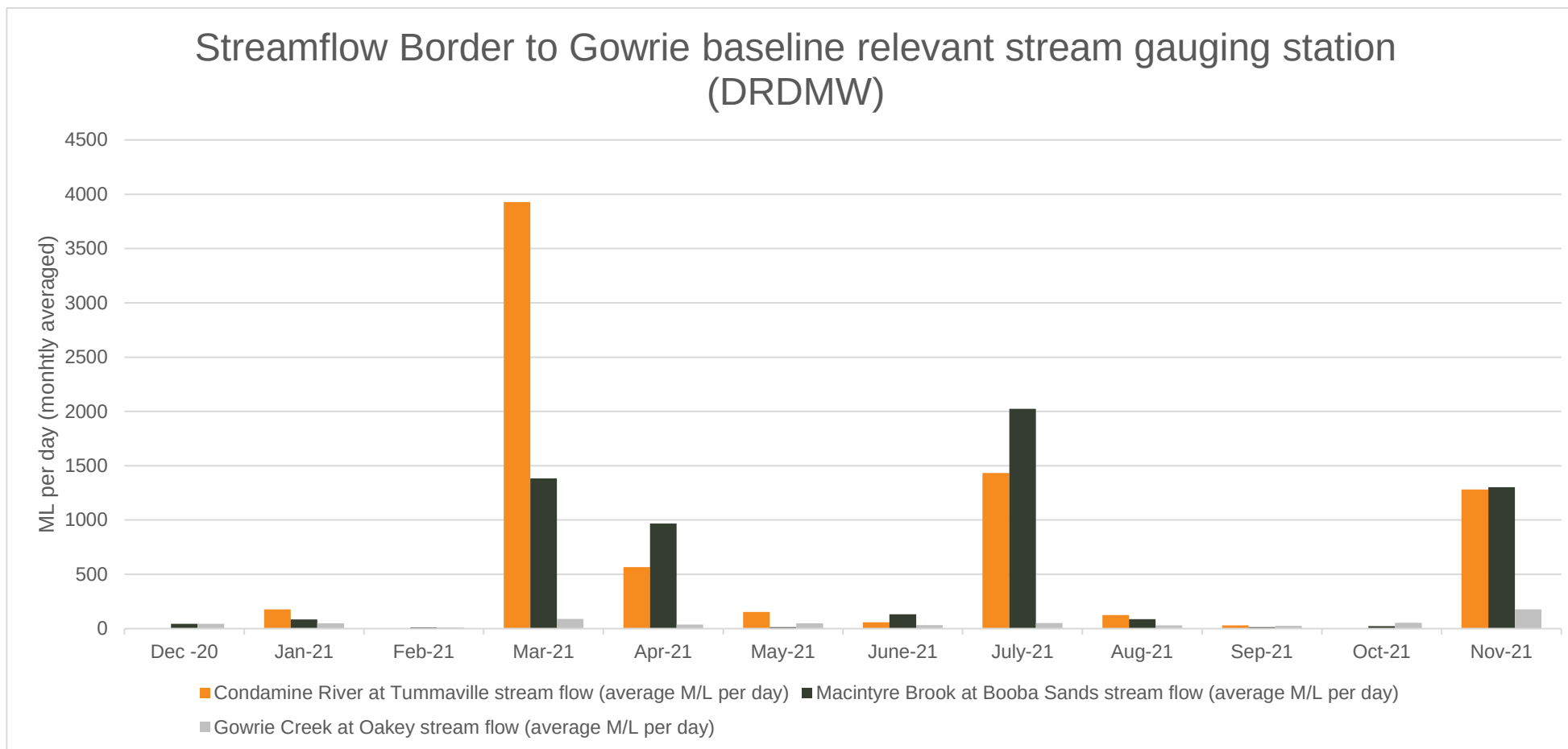


Figure 5-1 Relative streamflow (monthly) from DRDMW gauging station across water quality monitoring area

Source: DRDMW (2021)

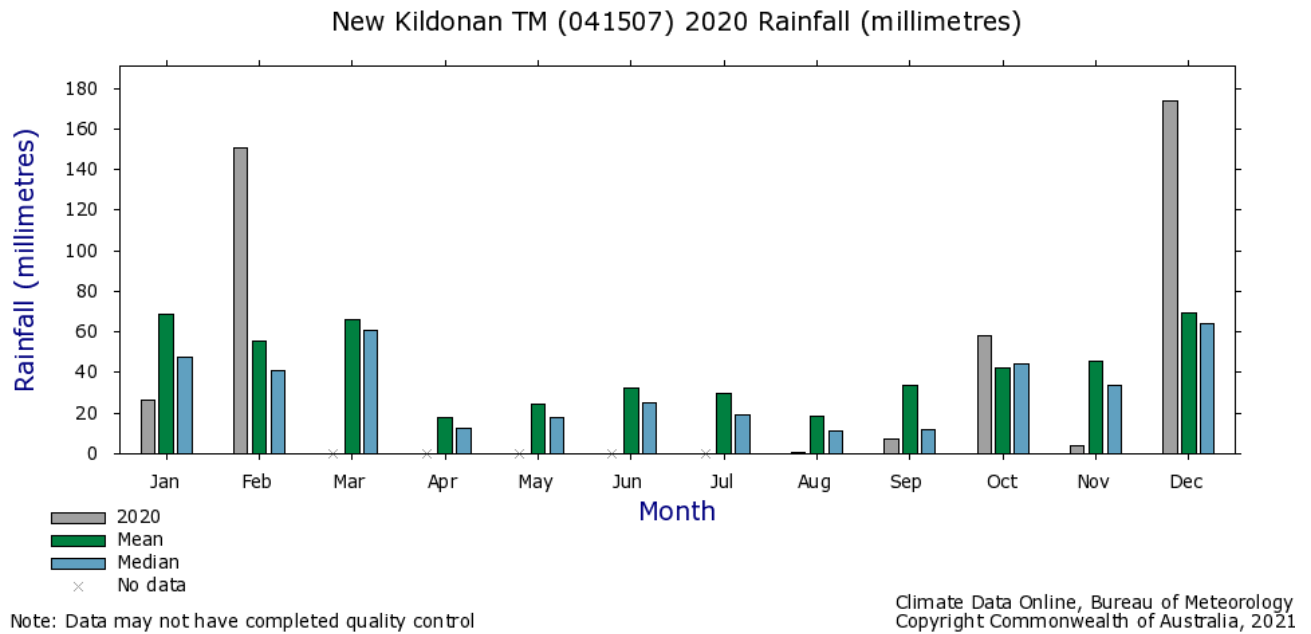


Figure 5-2 2020 Rainfall patterns for BoM New Kildonan TM rainfall station (041507)

Source: (Bom 2021)

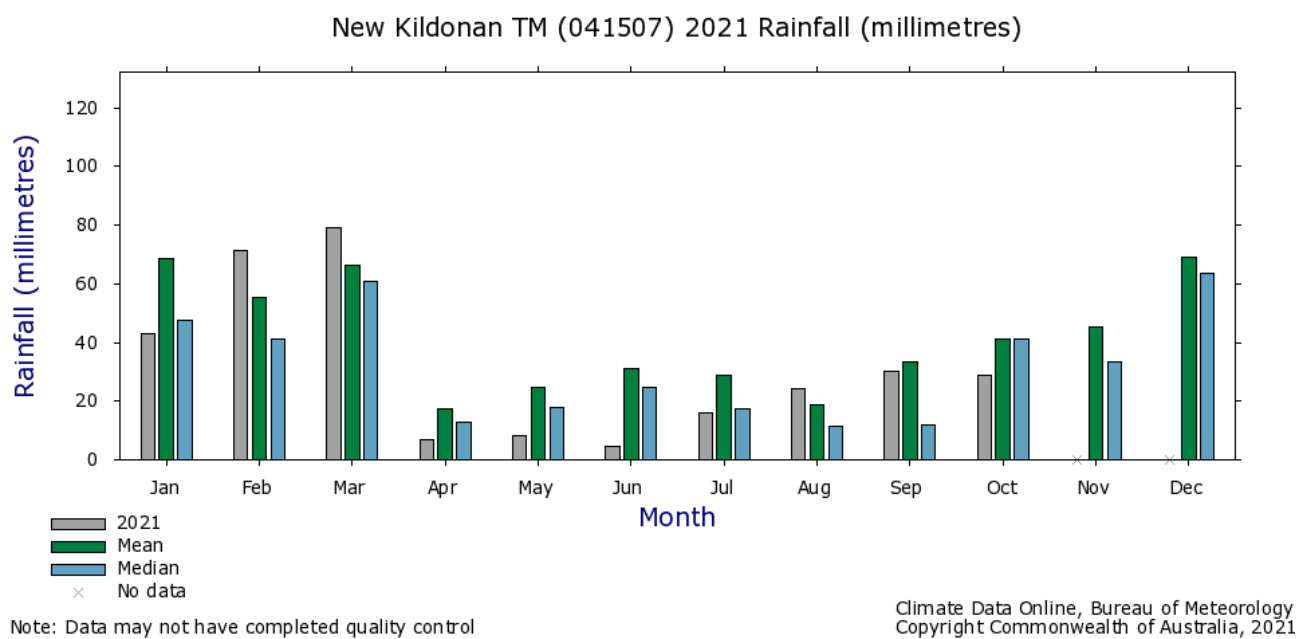


Figure 5-3 2021 Rainfall patterns for BoM New Kildonan TM rainfall station (041507)

Source: (Bom 2021)

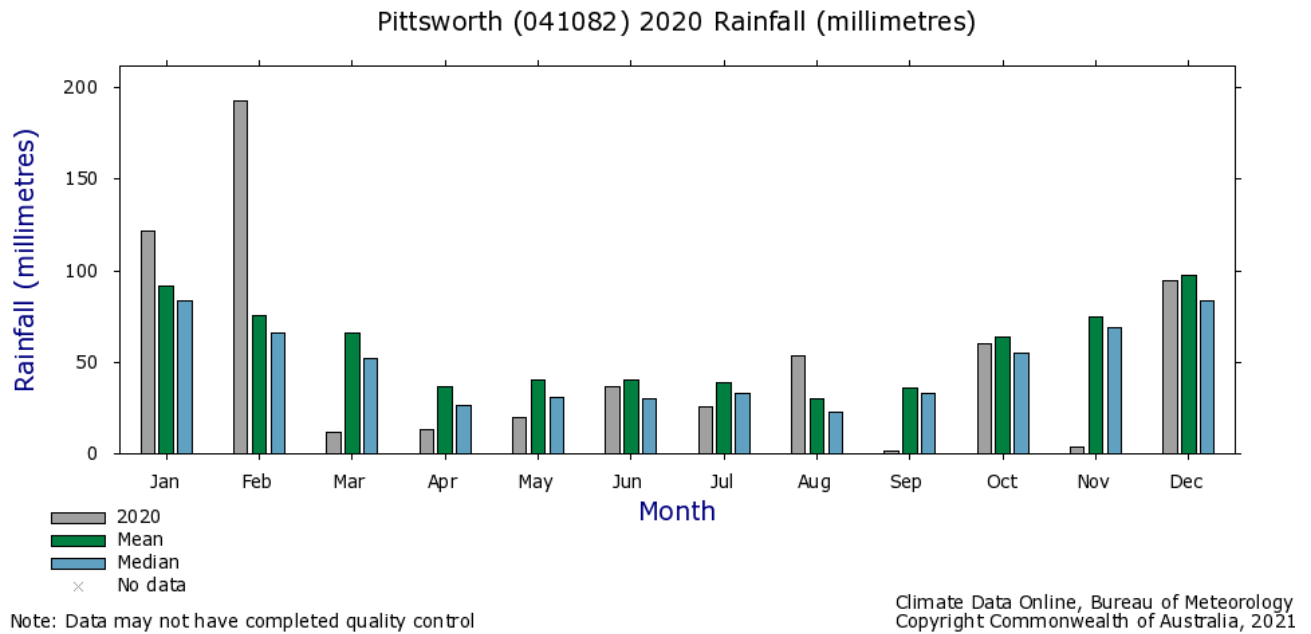


Figure 5-4 2020 rainfall patterns for BoM New Kildonan TM rainfall station (041507)

Source: (Bom 2021)

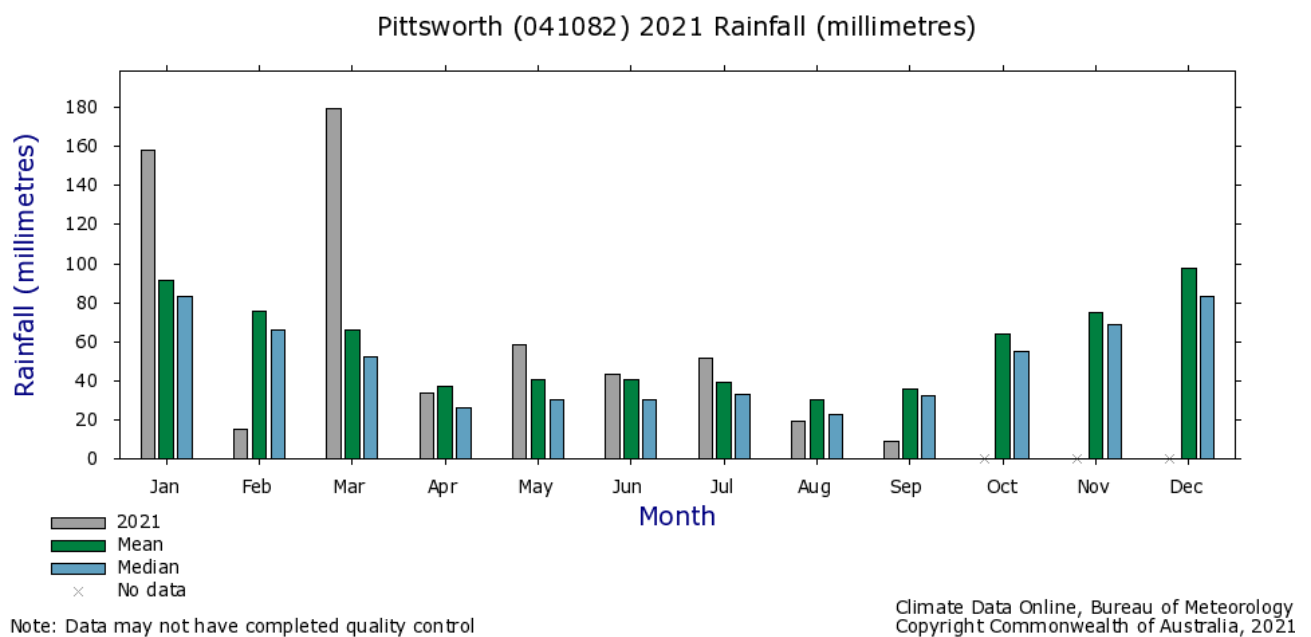


Figure 5-5 2021 rainfall patterns for BoM New Kildonan TM rainfall station (041507)

Source: (Bom 2021)

5.4 Laboratory Assessed Data

Laboratory water quality data for the monitoring program (including twelve routine and one high flow event) is presented in Table 5-3, Table 5-4, Table 5-5 and Table 5-6. Laboratory-issued reports are presented in Appendix C.

The following tables display specific data as follows:

- Table 5-3 presents laboratory-assessed general physico-chemical water quality parameter data
- Table 5-4 presents laboratory-assessed polyaromatic hydrocarbons parameter data
- Table 5-5 presents laboratory assessed dissolved metal
- Table 5-6 presents laboratory assessed total hardness.

Table 5-3 Laboratory assessed physico-chemical water quality

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
Basin Plan WQO	Low flow	-	3	0.07	0.02	-	30	0.02	-	-	-	0.575	0.010	-
	High flow	-	ID	0.15	ID	-	110	ID	-	-	-	0.9	0.195	-
B2GSW 1.2	14/12/20	380	<5	0.04	0.01	34	27	<0.01	<0.02	<0.02	0.7	0.7	<0.05	180
	19/01/21	320	<5	0.15	0.03	22	17	<0.01	<0.02	<0.02	1.4	1.4	<0.05	150
	24/02/21	No access												
	23/03/21*	No access												
	13/04/21	220	< 10	0.1	0.07	25	28	0.06	0.73	<0.02	0.5	1.23	0.73	110
	05/05/21	320	< 5	0.08	0.04	19	22	0.04	1.3	<0.02	0.7	2	1.3	176
	26/05/21	320	< 5	0.09	0.02	5	18	<0.01	0.94	<0.02	<0.2	0.94	0.94	180

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
B2GSW 1.2R	22/06/21	210	< 5	0.13	0.06	38	55	< 0.01	0.15	< 0.02	1.4	1.55	0.15	130
	21/07/21	180	< 5	0.12	0.05	12	48	0.02	0.27	< 0.02	0.3	0.58	0.28	110
	24/08/21	240	< 5	0.09	0.04	37	15	0.01	0.51	< 0.02	< 0.2	0.51	0.51	120
	21/09/21	270	< 5	0.05	0.02	14	9.1	0.02	0.12	< 0.02	0.7	0.82	0.12	160
	18/10/21	270	< 5	0.09	0.05	28	21	0.02	0.24	< 0.02	0.5	0.74	0.24	160
	17/11/21	180	< 5	0.07	0.05	6.8	5.2	0.03	0.24	< 0.02	0.61	0.85	0.24	115
	14/12/20	340	< 5	0.04	0.03	16	23	<0.01	<0.02	<0.02	0.6	0.6	<0.05	160
	19/01/21	310	< 5	0.16	0.03	4.9	23	0.01	<0.02	<0.02	0.9	0.9	<0.05	150
	24/02/21	No access												
	23/03/21*	No access												
	13/04/21	210	< 10	0.09	0.06	31	20	0.06	0.74	<0.02	0.9	1.64	0.74	100
	05/05/21	310	< 5	0.08	0.04	20	14	0.03	1.3	<0.02	<0.2	1.3	1.3	171
	26/05/21	310	< 5	0.07	0.03	11	16	0.02	0.96	<0.02	<0.2	0.98	0.98	190
	22/06/21	220	6.2	0.12	0.07	39	49	< 0.01	0.14	< 0.02	1.3	1.44	0.14	110
	21/07/21	180	< 5	0.14	0.06	34	82	0.02	0.27	< 0.02	< 0.2	0.28	0.28	110
	24/08/21	240	< 5	0.09	0.04	32	15	0.02	0.51	< 0.02	< 0.2	0.51	0.51	110
	21/09/21	260	< 5	0.05	0.02	12	5.4	0.02	0.12	< 0.02	0.3	0.42	0.12	160
	18/10/21	270	< 5	0.09	0.06	27	16	0.01	0.24	< 0.02	1.1	1.35	0.25	150
	17/11/21	180	< 5	0.06	0.06	5.2	55	0.02	0.27	< 0.02	0.46	0.73	0.27	115
WQO	Low flow	-	ID	0.055	0.011	-	11	0.008	-	-	-	0.71	0.018	-

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	High flow	-	ID	0.07	ID	-	25	ID	-	-	-	0.91	ID	-
B2GSW 1.3	15/12/20	420	6.4	0.4	<0.01	12	8	0.03	<0.02	<0.02	0.8	0.8	<0.05	200
	20/01/21	200	5.3	0.19	0.03	39	87	0.08	0.05	0.04	1.9	1.99	0.09	97
	24/02/21	210	8	0.06	0.02	9.9	7.9	0.25	<0.02	<0.02	1	1	<0.05	160
	24/03/21*	No access												
	14/04/21 ^a	230	< 10	0.09	0.05	24	38	0.03	0.33	0.06	0.3	0.69	0.39	110
	06/05/21	340	17	0.06	0.01	14	16	0.03	0.14	<0.02	0.5	0.65	0.15	187
	27/05/21	350	< 5	0.04	<0.01	6.4	12	0.01	0.11	<0.02	<0.2	<0.2	0.12	210
	23/06/21	420	19	0.03	< 0.01	32	11	< 0.01	< 0.02	< 0.02	1.7	1.7	< 0.05	200
	22/07/21	200	< 5	0.09	0.03	9.1	35	< 0.01	0.4	< 0.02	0.8	1.21	0.41	120
	25/08/21	310	< 5	0.06	0.01	42	15	< 0.01	0.35	< 0.02	< 0.2	0.35	0.35	140
	22/09/21	310	< 5	0.04	< 0.01	21	4.2	0.05	< 0.02	< 0.02	1.4	1.4	< 0.05	190
	19/10/21	360	< 5	0.03	< 0.01	16	12	0.02	< 0.02	< 0.02	< 0.2	< 0.2	< 0.05	190
	18/11/21	210	< 5	0.04	0.03	9.3	69	0.05	0.2	0.02	0.45	0.67	0.22	134
B2GSW 1.6	15/12/20	360	<5	0.02	<0.01	18	13	0.02	<0.02	<0.02	0.7	0.7	<0.05	170
	20/01/21	280	5.3	0.18	0.02	16	44	0.06	0.06	0.04	1.6	1.7	0.1	130
	24/02/21	420	9.1	0.05	0.02	14	17	0.14	<0.02	<0.02	1	1	<0.05	120
	24/03/21*	90	< 5	<0.5	0.07	240	320	0.03	0.18	<0.02	2.4	2.58	0.18	200
	14/04/21 ^a	240	< 10	0.09	0.06	27	22	0.1	0.48	<0.02	0.8	1.28	0.48	120
	06/05/21	380	15	0.04	0.01	25	29	0.05	0.08	<0.02	0.9	0.98	0.08	209
	27/05/21	470	< 5	0.03	<0.01	10	18	0.06	0.09	<0.02	<0.2	<0.2	0.09	280

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
B2GSW 1.7	23/06/21	260	< 5	0.04	< 0.01	39	16	< 0.01	0.02	< 0.02	1.2	1.2	< 0.05	160
	22/07/21	230	< 5	0.08	0.03	17	30	0.02	0.35	< 0.02	0.9	1.26	0.36	140
	25/08/21	310	< 5	0.07	0.02	52	18	0.07	0.37	< 0.02	< 0.2	0.37	0.37	150
	22/09/21	410	< 5	0.03	< 0.01	22	10	0.07	< 0.02	< 0.02	1.5	1.5	< 0.05	250
	19/10/21	350	< 5	0.04	0.01	29	23	0.03	0.05	0.02	< 0.2	< 0.2	0.07	170
	18/11/21	210	< 5	0.04	0.02	8.1	62	0.04	0.17	< 0.02	0.44	0.62	0.18	134
	14/12/20	320	<5	0.02	<0.01	14	120	<0.01	<0.02	<0.02	0.8	0.8	<0.05	150
	19/01/21	340	5.3	0.18	0.03	24	16	0.08	<0.02	0.05	0.7	0.77	0.07	160
	24/02/21	360	6.9	0.04	<0.01	18	22	0.08	<0.02	<0.02	0.7	0.7	<0.05	230
	24/03/21*	73	< 5	<0.5	0.07	280	390	0.05	0.27	<0.02	0.3	0.57	0.27	180
	14/04/21	230	< 10	0.08	0.03	28	26	0.14	0.38	<0.02	1.3	1.68	0.38	110
	05/05/21	390	43	0.04	0.01	22	18	0.05	0.14	<0.02	1	1.15	0.15	215
	26/05/21	410	< 5	0.06	<0.01	14	53	0.04	0.19	<0.02	<0.2	<0.2	0.19	250
	22/06/21	240	< 5	0.04	< 0.01	36	14	< 0.01	0.02	< 0.02	0.8	0.8	< 0.05	140
	21/07/21	210	< 5	0.08	0.03	7.1	35	< 0.01	0.39	< 0.02	0.9	1.3	0.4	130
	24/08/21	320	< 5	0.07	0.02	46	15	0.04	0.41	< 0.02	< 0.2	0.41	0.41	140
	21/09/21	370	< 5	0.03	< 0.01	17	2	0.03	< 0.02	< 0.02	0.3	0.3	< 0.05	220
	18/10/21	330	< 5	0.04	0.01	24	15	0.04	0.05	< 0.02	0.5	0.56	0.06	160
	17/11/21	210	< 5	0.05	0.02	8.5	52	0.04	0.17	< 0.02	0.44	0.62	0.18	134
WQO	Low flow	-	ID	0.03	0.008	-	35	0.001	-	-	-	0.52	0.006	-
	High flow	-	ID	0.04	ID	-	50	ID	-	-	-	0.60	ID	-

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
B2GSW 1.11	15/12/20	290	6.4	0.05	0.33	9.6	17	<0.01	<0.02	<0.02	0.7	0.7	<0.05	140
	20/01/21	200	7.5	0.14	0.02	30	54	0.07	<0.02	0.03	0.6	0.6	<0.05	95
	24/02/21	230	6.9	0.05	<0.01	13	6.3	0.03	<0.02	<0.02	1.2	1.2	<0.05	160
	24/03/21*	80	< 5	<0.5	0.04	160	190	0.04	0.33	<0.02	1	1.34	0.34	260
	14/04/21 ^a	220	< 10	0.07	0.02	18	56	0.05	0.06	<0.02	0.8	0.86	0.06	110
	06/05/21	270	7.5	0.04	0.02	18	23	0.07	<0.02	<0.02	1.1	1.1	<0.05	149
	27/05/21	290	8.9	0.06	<0.01	9	63	0.11	<0.02	<0.02	<0.2	<0.2	<0.05	170
	23/06/21	250	8.9	0.06	0.01	48	200	< 0.01	< 0.02	< 0.02	2.8	2.8	< 0.05	120
	22/07/21	No access												
	25/08/21	280	< 5	0.05	< 0.01	25	40	< 0.01	< 0.02	< 0.02	< 0.2	< 0.2	< 0.05	120
	22/09/21	270	< 5	0.04	< 0.01	23	20	0.02	< 0.02	< 0.02	0.6	0.6	< 0.05	160
	19/10/21	410	< 5	0.03	< 0.01	11	11	0.01	< 0.02	< 0.02	0.7	0.7	< 0.05	230
	18/11/21	150	< 5	0.05	0.01	27	150	0.16	0.54	< 0.02	0.08	0.63	0.55	96
B2GSW 1.14	14/12/20	Dry at the time of sampling												
	19/01/21													
	24/02/21													
	24/03/21*													
	13/04/21													
	05/05/21													
	27/05/21													
	23/06/21													
	22/07/21													

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	25/08/21													
	22/09/21													
	19/10/21													
	18/11/21													
B2GSW 1.16	15/12/20	No access												
	20/01/21	180	22	0.25	0.07	29	110	0.13	0.09	0.03	0.7	0.82	0.12	90
	24/02/21	220	7.5	0.07	0.04	15	23	0.09	<0.02	<0.02	0.6	0.6	<0.05	150
	24/03/21*	130	< 5	<0.5	0.2	320	450	0.05	2	<0.02	13	15	2.0	420
	14/04/21 ^a	160	< 10	0.15	0.06	62	83	0.23	<0.02	<0.02	0.9	0.9	<0.05	79
	06/05/21	180	47	0.07	0.03	13	95	0.05	<0.02	<0.02	<0.2	<0.2	<0.05	99
	27/05/21	180	5.3	0.06	<0.01	6.6	90	<0.01	<0.02	<0.02	0.2	0.2	<0.05	110
	23/06/21	170	5.3	0.05	< 0.01	37	62	< 0.01	< 0.02	< 0.02	0.8	0.8	< 0.05	85
	22/07/21	190	< 10	0.31	0.14	25	150	0.07	1.4	0.04	1.3	2.8	1.5	110
	25/08/21	200	< 5	0.07	0.02	37	110	< 0.01	< 0.02	< 0.02	< 0.2	< 0.2	< 0.05	88
	22/09/21	210	< 5	0.09	0.03	27	100	0.04	0.07	< 0.02	1.5	1.57	0.07	130
	19/10/21	330	9.4	0.05	< 0.01	67	140	0.01	< 0.02	< 0.02	1.7	1.7	< 0.05	290
	18/11/21	150	< 5	0.1	0.06	58	180	0.1	0.6	0.07	0.33	1	0.67	96
B2GSW 1.18	15/12/20	Dry at the time of sampling												
	19/01/21	180	< 5	0.23	0.08	130	400	0.05	0.3	<0.02	0.7	1	0.3	89
	23/02/21	200	6.4	0.05	0.06	14	48	0.06	<0.02	<0.02	<0.2	<0.2	<0.05	190
	23/03/21*	120	< 5	<0.5	0.1	700	970	0.08	1.3	<0.02	4.6	5.9	1.3	160
	13/04/21	160	< 10	0.13	0.05	44	140	0.08	0.34	<0.02	0.4	0.75	0.35	79

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	06/05/21	170	7.5	0.05	0.02	14	140	0.06	0.15	<0.02	<0.2	<0.2	0.15	94
	27/05/21	170	< 5	0.06	<0.01	13	150	0.02	0.07	<0.02	<0.2	<0.2	0.08	100
	23/06/21	170	8.9	0.05	0.01	36	140	< 0.01	0.02	< 0.02	1.4	1.4	< 0.05	84
	22/07/21	190	< 5	0.25	0.14	18	140	0.06	0.92	0.03	1.8	2.75	0.95	110
	25/08/21	170	< 5	0.21	0.1	19	140	0.02	0.69	< 0.02	0.2	0.89	0.69	79
	22/09/21	160	< 5	0.14	0.05	31	170	0.06	0.39	< 0.02	1.3	1.7	0.4	100
	19/10/21	240	< 5	0.12	0.03	21	140	0.03	< 0.02	< 0.02	1.4	1.4	< 0.05	250
	18/11/21	170	< 5	0.1	0.07	34	140	0.1	0.16	< 0.02	0.71	0.89	0.18	108.8
B2GSW 1.20R2	15/12/20	Dry at the time of sampling												
	19/01/21													
	23/02/21													
	23/03/21*	220	< 5	<0.5	0.25	750	910	0.15	7.8	<0.02	4	11.8	7.8	360
	13/04/21	Dry at the time of sampling												
	06/05/21													
	27/05/21	590	< 5	0.03	<0.01	12	95	0.06	<0.02	<0.02	<0.2	<0.2	<0.05	350
	23/06/21	Dry at the time of sampling												
	22/07/21	Not Representative												
	25/08/21	Dry at the time of sampling												
	22/09/21													
	19/10/21													
	18/11/21													

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
WQO	Low flow	-	5	0.045	0.015	-	9	0.006	-	-	-	0.595	0.003	-
	High flow	-	ID	0.060	0.020	-	25	ID	-	-	-	0.830	ID	-
B2GSW 1.23	15/12/20	Dry at the time of sampling												
	20/01/21	190	< 5	0.25	0.06	34	190	0.12	0.02	0.06	1	1.08	0.08	92
	23/02/21	250	20	0.07	0.01	56	87	0.08	<0.02	<0.02	<0.2	<0.2	<0.05	160
	23/03/21*	130	< 5	<0.5	0.2	360	440	0.1	3.4	<0.02	1.2	4.6	3.4	360
	14/04/21 ^a	290	< 10	0.12	0.07	35	54	0.08	0.11	<0.02	0.8	0.91	0.11	140
	06/05/21	300	< 5	0.07	0.02	10	58	0.03	0.03	<0.02	<0.2	<0.2	<0.05	165
	27/05/21	280	< 5	0.09	<0.01	30	59	0.04	0.03	<0.02	<0.2	<0.2	<0.05	170
	23/06/21	290	91	0.15	< 0.01	55	36	< 0.01	< 0.02	< 0.02	1	1	< 0.05	140
	22/07/21	220	< 5	0.23	0.13	19	130	0.04	2	0.04	0.7	2.8	2.1	130
	25/08/21	210	6	0.1	0.03	61	130	0.01	0.3	< 0.02	< 0.2	0.3	0.3	96
	22/09/21	210	< 5	0.1	0.02	39	100	0.07	0.04	< 0.02	2.1	2.1	< 0.05	130
	19/10/21	Not Representative												
	18/11/21	200	< 5	0.13	0.03	21	140	0.07	< 0.02	< 0.02	0.6	0.6	< 0.05	128
B2GSW 1.24	16/12/20	Dry at time of sampling												
	20/01/21	200	8.5	0.29	0.06	56	270	0.2	<0.02	0.14	1.2	1.36	0.16	97
	23/02/21	230	5.3	0.13	0.03	41	110	0.13	<0.02	<0.02	<0.2	<0.2	<0.05	180
	25/03/21*	120	< 5	<0.5	0.27	110	300	0.05	0.95	<0.02	0.6	1.55	0.95	300
	14/04/21 ^a	170	< 10	0.32	0.21	85	84	0.09	<0.02	<0.02	9.5	9.5	<0.05	83
	06/05/21	180	15	0.28	0.09	39	130	0.07	<0.02	<0.02	<0.2	<0.2	<0.05	99

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	27/05/21	200	< 5	0.32	0.08	48	250	0.02	0.14	<0.02	<0.2	<0.2	0.15	120
	23/06/21	190	< 5	0.29	0.03	100	260	< 0.01	0.08	< 0.02	< 0.2	< 0.2	0.08	93
	22/07/21	160	< 5	0.23	0.06	39	130	0.04	0.25	0.03	0.8	1.08	0.28	96
	25/08/21	160	< 5	0.18	0.04	190	160	0.05	< 0.02	< 0.02	0.5	0.5	< 0.05	74
	22/09/21	150	< 5	0.21	0.03	140	180	0.09	0.04	< 0.02	1.3	1.37	0.07	90
	19/10/21	220	5.3	0.24	0.02	150	290	0.05	< 0.05	< 0.02	< 0.2	< 0.2	< 0.05	360
	18/11/21	210	< 5	0.37	0.13	73	460	0.01	5	< 0.02	< 0.05	5	5	134
WQO	Low flow	-	9	0.17	0.02	-	25	0.004	-	-	-	0.86	0.004	-
	High flow	-	4	0.95	0.50	-	220	ID	-	-	-	2.2	0.480	-
B2GSW 1.27	15/12/20	Dry at time of sampling												
	20/01/21	220	5.9	0.35	0.16	20	23	<0.01	<0.02	<0.02	0.9	0.9	<0.05	110
	24/02/21	330	14	0.1	0.05	61	75	0.28	<0.02	<0.02	0.4	0.4	<0.05	190
	23/03/21*	160	< 5	<0.5	0.34	330	670	0.05	1.1	<0.02	<0.2	1.1	1.1	300
	14/04/21 ^a	220	< 10	0.25	0.07	98	79	0.03	0.31	<0.02	0.6	0.91	0.31	110
	06/05/21	270	< 5	0.11	0.12	18	17	<0.01	<0.02	<0.02	0.7	0.7	<0.05	149
	27/05/21	280	< 5	0.17	0.08	31	63	0.07	<0.02	<0.02	<0.2	<0.2	<0.05	170
	23/06/21	330	12	0.08	0.03	32	11	0.03	< 0.02	< 0.02	1.2	1.2	< 0.05	160
	22/07/21	290	< 10	0.29	0.12	42	84	0.02	0.47	< 0.02	0.9	1.38	0.48	170
	25/08/21	370	< 5	0.08	0.04	27	6	0.08	< 0.02	< 0.02	< 0.2	< 0.2	< 0.05	180
	22/09/21	370	< 5	0.05	0.03	24	1.5	0.04	< 0.05	< 0.02	0.4	0.4	< 0.05	220
	19/10/21	130	< 5	2.1	0.2	1600	3600	0.15	1.8	0.04	3.6	5.4	1.8	300

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	18/11/21	280	< 5	0.41	0.22	32	180	0.06	2.6	0.16	0.2	3	2.8	179
B2GSW 1.29	15/12/20	Dry at time of sampling												
	20/01/21													
	24/02/21													
	24/03/21*	No access												
	14/04/21 ^a	240	19	0.77	0.88	38	21	0.04	<0.02	<0.02	8	8	<0.05	120
	06/05/21	260	9.6	0.89	0.6	16	24	0.04	<0.02	<0.02	0.5	0.5	<0.05	143
	27/05/21	230	< 5	0.86	0.56	15	69	0.11	<0.05	<0.05	<0.2	<0.2	<0.05	140
	23/06/21	Not representative												
	22/07/21	Not representative												
	25/08/21	Dry at time of sampling												
	22/09/21													
	19/10/21	Not representative												
	18/11/21	No access												
B2GSW 1.30	15/12/20	Dry at time of sampling												
	20/01/21	220	12	0.33	0.14	22	25	0.01	<0.02	<0.02	1.6	1.6	<0.05	110
	23/02/21	270	8.5	0.32	0.2	84	87	0.36	<0.02	<0.02	0.8	0.8	<0.05	180
	23/03/21*	220	6.4	<0.5	0.18	86	100	0.22	0.17	<0.02	1	1.17	0.17	190
	14/04/21	220	< 10	0.23	0.19	84	55	0.03	0.3	<0.02	0.9	1.2	0.30	110
	06/05/21	270	< 5	0.11	0.08	12	13	0.03	<0.02	<0.02	<0.2	<0.2	<0.05	149
	27/05/21	240	< 5	0.21	0.11	22	83	0.03	0.47	<0.02	<0.2	0.49	0.49	140
	23/06/21	330	6.2	0.07	0.03	35	9.5	< 0.01	< 0.02	< 0.02	1.2	1.2	< 0.05	200

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	22/07/21	280	< 5	0.28	0.12	23	65	0.02	0.46	< 0.02	0.9	1.38	0.48	170
	25/08/21	370	< 5	0.07	0.04	31	4.4	< 0.01	< 0.02	< 0.02	< 0.2	< 0.2	< 0.05	170
	22/09/21	360	< 5	0.08	0.05	18	3.2	0.05	< 0.05	< 0.02	0.6	0.6	< 0.05	220
	19/10/21	Not representative												
	18/11/21	260	< 5	0.34	0.22	28	170	0.06	2.2	0.18	0.3	2.6	2.3	166
B2GSW 1.32	15/12/20	Dry at the time of sampling												
	20/01/21													
	24/02/21													
	24/03/21*	180	< 5	<0.5	0.43	150	330	0.03	0.91	<0.02	<0.2	0.91	0.91	220
	14/04/21 ^a	220	< 10	0.21	0.19	58	53	0.02	0.29	<0.02	0.6	0.89	0.29	110
	06/05/21	290	33	0.14	0.1	4.4	9	0.03	<0.02	<0.02	<0.2	<0.2	<0.05	160
	27/05/21	300	5.3	0.18	0.1	18	43	0.02	0.32	<0.02	<0.2	0.34	0.34	180
	23/06/21	340	< 5	0.09	0.02	28	13	< 0.01	< 0.02	< 0.02	1.4	1.4	< 0.05	200
	22/07/21	290	< 5	0.29	0.13	13	56	0.02	0.47	< 0.02	< 0.2	0.48	0.48	170
	25/08/21	370	< 5	0.11	0.07	48	12	< 0.01	< 0.02	< 0.02	< 0.2	< 0.2	< 0.05	160
	22/09/21	Dry at the time of sampling												
	19/10/21													
	18/11/21	270	< 5	0.37	0.23	29	98	0.03	2.6	0.16	0.2	3	2.8	173
B2GSW 1.33	15/12/20	Dry at the time of sampling												
	21/01/21	360	16	0.71	0.44	25	7.7	0.16	<0.02	<0.02	2.5	2.5	<0.05	170
	25/02/21	430	11	0.3	0.11	11	9.2	0.09	<0.02	<0.02	2.1	2.1	<0.05	300
	24/03/21*	No access												

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	14/04/21 ^a	220	< 10	0.24	0.22	79	44	0.02	0.34	<0.02	9.5	9.84	0.34	110
	06/05/21	290	8.5	0.16	0.11	5.4	3.8	0.02	<0.02	<0.02	<0.2	<0.2	<0.05	160
	27/05/21	290	< 5	0.18	0.09	22	55	0.04	0.22	0.02	<0.2	0.25	0.25	170
	23/06/21	330	< 5	0.09	0.03	28	4.1	< 0.01	< 0.02	< 0.02	1.9	1.9	< 0.05	200
	22/07/21	240	< 5	0.3	0.12	27	67	0.02	0.49	< 0.02	0.5	1	0.5	140
	25/08/21	350	< 5	0.14	0.08	28	15	< 0.01	< 0.02	< 0.02	< 0.2	< 0.2	< 0.05	150
	22/09/21	Not Representative												
	19/10/21	290	< 5	0.3	0.2	42	66	0.04	1	0.03	< 0.2	1	1	170
	18/11/21	270	< 5	0.36	0.22	34	100	0.04	2.6	0.19	0.3	3.1	2.8	173
WQO	Low flow	-	5	0.110	0.045	-	13	0.010	-	-	-	1	0.005	-
	High flow	-	ID	0.340	0.09	-	55	ID	-	-	-	1.28	ID	-
B2GSW 1.39	16/12/20	No access												
	21/01/21	930	< 5	0.2	0.03	25	20	0.03	0.04	0.02	<0.2	<0.2	0.06	460
	25/02/21	1400	5.3	0.04	<0.01	9.9	11	0.03	<0.02	<0.02	<0.2	<0.2	<0.05	780
	25/03/21*	370	< 5	<0.5	0.31	96	150	0.05	2	<0.02	13	15	2.0	230
	15/04/21	1000	< 10	0.06	0.07	27	17	0.02	0.91	<0.02	15	15.91	0.91	490
	06/05/21	830	< 5	0.2	0.14	31	45	0.05	1	0.03	<0.2	1	1.0	457
	28/05/21	1500	< 5	0.05	<0.01	45	45	0.04	1.5	0.02	<0.2	1.5	1.5	900
	24/06/21	1500	5.3	0.05	< 0.01	42	11	< 0.01	0.21	< 0.02	1.5	1.71	0.21	900
	23/07/21	1700	< 5	0.06	0.03	4.8	3.4	0.01	1.7	< 0.02	< 0.2	1.7	1.7	1000
	26/08/21	2000	< 5	0.03	< 0.01	69	5.3	0.01	0.87	< 0.02	< 0.2	0.87	0.87	970

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	23/09/21	1900	< 5	0.03	< 0.01	40	33	0.21	0.81	< 0.02	< 0.2	0.83	0.83	1100
	20/10/21	970	< 5	0.08	0.04	41	43	0.02	0.17	< 0.02	< 0.2	< 0.2	0.17	380
	19/11/21	930	< 5	0.05	0.03	87	45	0.1	0.78	< 0.02	0.4	1.2	0.8	595
B2GSW 1.40	16/12/20	No access												
	21/01/21	660	< 5	0.22	0.04	13	8.4	<0.01	0.21	<0.02	0.5	0.73	0.23	320
	25/02/21	Dry at the time of sampling												
	25/03/21*	540	< 5	<0.5	0.09	91	80	0.02	1.5	<0.02	<0.5	1.5	1.5	310
	15/04/21	1100	< 10	0.03	0.03	10	3.5	<0.01	0.26	<0.02	0.3	0.58	0.28	540
	07/05/21	720	< 5	0.09	0.05	31	23	0.03	1.5	<0.02	<0.2	1.5	1.5	396
	28/05/21	1200	< 5	0.03	<0.01	16	4.3	<0.01	0.95	<0.02	<0.2	0.96	0.96	720
	24/06/21	1200	< 5	0.05	0.02	35	< 1	< 0.01	0.43	< 0.02	1.2	1.63	0.43	580
	23/07/21	1400	< 5	0.05	0.03	4.8	4	< 0.01	2.4	< 0.02	< 0.2	2.4	2.4	840
	26/08/21	1000	< 5	0.04	0.04	26	3.3	0.04	1.9	< 0.02	< 0.2	2	2	470
	23/09/21	1100	< 5	0.01	< 0.01	18	7.3	< 0.01	1.5	0.03	0.7	2.3	1.6	660
	20/10/21	860	< 5	0.11	0.06	63	43	< 0.01	2	0.03	0.4	2.4	2	360
	19/11/21	470	< 5	0.13	0.06	< 5	190	< 0.01	1.1	< 0.02	< 0.05	1.2	1.2	301
B2GSW 1.42	14/12/20	400	<5	0.16	0.31	130	120	0.02	<0.02	<0.02	0.5	0.5	0.54	190
	21/01/21	880	< 5	0.19	0.02	12	4.5	<0.01	0.24	<0.02	0.7	0.95	0.25	430
	25/02/21	1400	< 5	0.03	0.01	8	5.4	0.04	0.41	<0.02	<0.2	0.42	0.42	730
	25/03/21*	690	< 5	<0.5	0.09	42	30	0.03	1.5	<0.02	<0.2	1.6	1.6	460
	15/04/21	1200	< 10	<0.01	<0.01	< 2	1.4	0.01	0.84	<0.02	0.3	1.16	0.86	600
	07/05/21	960	< 5	0.09	0.06	19	13	0.04	1.9	<0.02	<0.2	2.0	2.0	528

Site	Sample Date	Conductivity (µS/cm) (at 25°C)	Chlorophyll a (µg/L)	Total P (mg/L)	Filterable reactive P (mg/L)	Suspended solids (mg/L)	Turbidity (NTU)	Ammonia (mg/L)	Nitrate (mg/L)	Nitrite (mg/L)	Total Kjeldahl nitrogen (mg/L)	Total N (mg/L)	Nitrate & Nitrite (as N) (mg/L)	Salinity (from EC) (mg/L)
	28/05/21	1100	< 5	0.02	<0.01	< 1	< 1	<0.01	1.5	<0.02	<0.2	1.5	1.5	660
	24/06/21	1200	< 5	0.03	0.01	25	1.2	< 0.01	0.49	< 0.02	4.2	4.7	0.5	720
	23/07/21 ^a	1400	< 5	0.04	0.03	3	2.3	< 0.01	2.7	< 0.02	< 0.2	2.7	2.7	840
	26/08/21	1200	< 5	0.06	0.03	21	1.7	0.02	2.5	< 0.02	< 0.2	2.5	2.5	550
	23/09/21	1200	< 5	0.01	< 0.01	11	5.4	< 0.01	1.9	< 0.02	0.5	2.4	1.9	720
	20/10/21	970	< 5	0.1	0.08	24	12	< 0.01	2.1	< 0.02	< 0.2	2.1	2.1	410
	19/11/21	590	< 5	0.11	0.07	< 5	41	< 0.01	1.6	< 0.02	< 0.05	1.7	1.7	378

* Flood flow event

a Administrative error with date reported on water quality report from laboratory. No QA/QC violation detected.

ID Insufficient data for determination of water quality objective

Bold Exceeds Regional WQO

Table 5-4 Laboratory assessment for Polycyclic Aromatic Hydrocarbons

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
B2GSW 1.2	14/12/20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	No access																
	23/03/21*	No Access																
	13/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	05/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	26/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.2R	14/12/20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	No access																
	23/03/21*	No Access																
	13/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	05/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	26/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.3	15/12/20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	20/01/12	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/03/21*	No access																
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.6	15/12/20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	20/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.7	14/12/20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	05/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	26/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.11	15/12/20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	20/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	Not accessible																
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&i)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1.2.3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.14	14/12/20	Dry at the time of sampling																
	19/01/21																	
	24/02/21																	
	24/03/21*																	
	13/04/21																	
	05/05/21																	
	27/05/21																	
	23/06/21																	
	22/07/21																	
	25/08/21																	
	22/09/21																	
	19/10/21																	

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21																	
B2GSW 1.16	14/12/20	No access																
	20/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.18	15/12/20	Dry at the time of sampling																
	19/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	13/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&i)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.20R2	15/12/20	Dry at the time of sampling																
	19/01/21																	
	23/02/21																	
	23/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	13/04/21	Dry at the time of sampling																
	06/05/21																	
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	Dry at the time of sampling																
	22/07/21	Not Representative																
	25/08/21																	
	22/09/21																	
	19/10/21																	
		Dry at the time of sampling																

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21																	
B2GSW 1.23	15/12/20	Dry at the time of sampling																
	20/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	Not Representative																

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.24	16/12/20	Dry at the time of sampling																
	20/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.27	15/12/20	Dry at the time of sampling																
	20/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.29	15/12/20	Dry at the time of sampling																
	20/01/21																	
	24/02/21																	
	24/03/21*	No access																
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	Not representative																
	22/07/21	Not representative																
	25/08/21	Dry at time of sampling																
	22/09/21																	
	19/10/21	Not representative																

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	No access																
B2GSW 1.30	15/12/20	Dry at time of sampling																
	20/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	19/10/21	Not representative																

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.32	15/12/20	Dry at the time of sampling																
	20/01/21																	
	24/02/21																	
	24/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	Dry at the time of sampling																
	19/10/21																	

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&i)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.33	15/12/20	Dry at the time of sampling																
	21/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/03/21	No access																
	14/04/21a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	27/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	22/09/21	Not Representative																
	19/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	18/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.39	16/12/20	No access																
	21/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	15/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	06/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	28/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/07/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	26/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	20/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	19/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.40	16/12/20	No access																
	21/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/02/21	Dry at the time of sampling																
	25/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	15/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	07/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	28/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/07/21	0.001	<0.001	<0.001	0.006	0.005	0.005	0.002	0.005	0.008	<0.001	0.01	<0.001	0.003	<0.001	0.003	0.01	0.058
	26/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	20/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&j)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	19/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B2GSW 1.42	14/12/20	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	21/01/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/02/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	25/03/21*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	15/04/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	07/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	28/05/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	24/06/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/07/21 ^a	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	26/08/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	23/09/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	20/10/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Site	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(b&i)fluorantheneN07	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH*
	19/11/21	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Water quality objectives for PAHs were not included

* Flood flow event

a Administrative error with date reported on water quality report from laboratory. No QA/QC violation detected.



Table 5-5 Laboratory assessment of filtered heavy metals

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
B2GSW 1.2	14/12/20	0.003	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.003	<0.005
	19/01/21	0.004	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.004	<0.005
	24/02/21	No access							
	23/03/21*	No access							
	13/04/21	0.005	<0.0002	0.001	0.004	<0.001	<0.0001	0.003	<0.005
	05/05/21	0.004	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	26/05/21	0.004	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
	22/06/21	0.002	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
	21/07/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	24/08/21	0.003	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	21/09/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	0.005
	18/10/21	0.003	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	17/11/21	0.004	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
B2GSW 1.2R	14/12/20	0.004	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.003	<0.005
	19/01/21	0.004	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.004	<0.005
	24/02/21	No access							
	23/03/21*	No access							
	13/04/21	0.004	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	05/05/21	0.003	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
	26/05/21	0.004	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
	22/06/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	21/07/21	0.002	<0.0002	0.001	0.003	<0.001	<0.0001	0.002	<0.005

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	24/08/21	0.003	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	0.006
	21/09/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
	18/10/21	0.004	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	17/11/21	0.004	<0.0002	<0.001	0.003	<0.001	<0.0001	0.004	<0.005
B2GSW 1.3	15/12/20	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005
	20/01/12	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	24/02/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005
	24/03/21*	No access							
	14/04/21a	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	06/05/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	27/05/21	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005
	22/07/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	0.005
	25/08/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	<0.005
	22/09/21	0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.001	<0.005
	19/10/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.006
	18/11/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
B2GSW 1.6	15/12/20	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005
	20/01/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	24/02/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005
	24/03/21*	<0.001	<0.0002	0.002	0.002	0.002	<0.0001	<0.001	<0.005
	14/04/21a	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	<0.005
	06/05/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	27/05/21	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005
	22/07/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	<0.005
	25/08/21	0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.001	0.005
	22/09/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.007
	19/10/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005
	18/11/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
B2GSW 1.7	14/12/20	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005
	19/01/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005
	24/02/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005
	24/03/21*	0.001	<0.0002	0.001	0.003	0.002	<0.0001	<0.001	<0.005
	14/04/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	<0.005
	05/05/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005
	26/05/21	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005
	22/06/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005
	21/07/21	0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005
	24/08/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	<0.005
	21/09/21	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005
	18/10/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	0.062
	17/11/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
B2GSW 1.11	15/12/20	0.003	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	0.006
	20/01/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	24/02/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	24/03/21*	<0.001	<0.0002	0.002	0.003	0.002	<0.0001	<0.001	<0.005
	14/04/21a	0.002	<0.0002	0.001	0.002	<0.001	<0.0001	0.003	<0.005
	06/05/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	27/05/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	0.011
	22/07/21								
	25/08/21	0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	0.006
	22/09/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	19/10/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	18/11/21	0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.004	<0.005
B2GSW 1.14	14/12/20	Dry at the time of sampling							
	19/01/21								
	24/02/21								
	24/03/21*								
	13/04/21								
	05/05/21								
	27/05/21								
	23/06/21								
	22/07/21								
	25/08/21								
	22/09/21								
	19/10/21								
	18/11/21								

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
B2GSW 1.16	15/12/20	No access							
	20/01/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	24/02/21	0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	24/03/21*	0.001	<0.0002	<0.001	0.003	0.001	<0.0001	<0.001	<0.005
	14/04/21a	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	27/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	22/07/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	0.006
	25/08/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
	22/09/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
	19/10/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
	18/11/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
B2GSW 1.18	15/12/20	Dry at the time of sampling							
	19/01/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	23/02/21	0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
	23/03/21*	<0.001	<0.0002	<0.001	0.002	0.001	<0.0001	<0.001	<0.005
	13/04/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
	27/05/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	<0.005
	22/07/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	0.034
	25/08/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	0.01

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	22/09/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	<0.005
	19/10/21	0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	<0.005
	18/11/21	0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
B2GSW 1.20R2	15/12/20	Dry at the time of sampling							
	19/01/21								
	23/02/21								
	23/03/21*	0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	<0.001	<0.005
	13/04/21	Dry at the time of sampling							
	06/05/21								
	27/05/21	0.001	<0.0002	<0.001	0.006	<0.001	<0.0001	0.003	<0.005
	23/06/21	Dry at the time of sampling							
	22/07/21	Not Representative							
	25/08/21	Dry at the time of sampling							
	22/09/21								
	19/10/21								
	18/11/21								
B2GSW 1.23	15/12/20	Dry at the time of sampling							
	20/01/21	0.002	<0.0002	<0.001	0.003	<0.001	<0.0001	0.004	<0.005
	23/02/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.003	0.008
	23/03/21*	<0.001	<0.0002	0.001	0.002	0.001	<0.0001	<0.001	<0.005
	14/04/21a	0.002	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	27/05/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.004	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	22/07/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	0.02
	25/08/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.003	0.007
	22/09/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.004	0.017
	19/10/21	Not Representative							
	18/11/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.004	<0.005
B2GSW 1.24	16/12/20	Dry at time of sampling							
	20/01/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.005	<0.005
	23/02/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	0.005	<0.005
	25/03/21*	<0.001	<0.0002	0.002	0.003	0.001	<0.0001	<0.001	<0.005
	14/04/21a	0.002	<0.0002	<0.001	0.004	<0.001	<0.0001	0.005	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
	27/05/21	0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.006	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	0.012
	22/07/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	25/08/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
	22/09/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.005	<0.005
	19/10/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.005	<0.005
	18/11/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
B2GSW 1.27	15/12/20	Dry at time of sampling							
	20/01/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.005	<0.005
	24/02/21	0.002	<0.0002	<0.001	0.001	<0.001	<0.0001	0.005	0.03

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	23/03/21*	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	<0.001	<0.005
	14/04/21a	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
	27/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.004	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	22/07/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	25/08/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	22/09/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	0.015
	19/10/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	18/11/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
B2GSW 1.29	15/12/20	Dry at time of sampling							
	20/01/21								
	24/02/21								
	24/03/21*	No access							
	14/04/21a	0.003	<0.0002	0.001	0.001	<0.001	<0.0001	0.008	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.008	<0.005
	27/05/21	0.002	<0.0002	<0.001	0.002	<0.001	<0.0001	0.009	<0.005
	23/06/21	Not representative							
	22/07/21	Not representative							
	25/08/21	Dry at time of sampling							
	22/09/21								
	19/10/21	Not representative							
	18/11/21	No access							

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
B2GSW 1.30	15/12/20	Dry at time of sampling							
	20/01/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.004	<0.005
	23/02/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.005	0.015
	23/03/21*	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005
	14/04/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005
	27/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	22/07/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	25/08/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	22/09/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	0.023
	19/10/21	Not representative							
	18/11/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
B2GSW 1.32	15/12/20	Dry at the time of sampling							
	20/01/21								
	24/02/21								
	24/03/21*	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	<0.001	<0.005
	14/04/21a	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	0.018
	27/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	0.015
	22/07/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	25/08/21	<0.001	<0.0002	<0.001	0.004	<0.001	<0.0001	0.004	<0.005

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	22/09/21	Dry at the time of sampling							
	19/10/21								
	18/11/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
B2GSW 1.33	15/12/20	Dry at the time of sampling							
	21/01/21	0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.007	0.009
	25/02/21	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.006	<0.005
	25/03/21	No access							
	14/04/21a	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.003	<0.005
	27/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	23/06/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	22/07/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	25/08/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
	22/09/21	Not Representative							
	19/10/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
	18/11/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.005	<0.005
B2GSW 1.39	15/12/20	No access							
	21/01/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.005	<0.005
	25/02/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.005	<0.005
	25/03/21*	<0.001	<0.0002	<0.001	0.004	<0.001	<0.0001	0.002	<0.005
	15/04/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.006	<0.005
	06/05/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.004	<0.005
	28/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.007	<0.005

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	24/06/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.005	<0.005
	23/07/21	<0.001	<0.0002	<0.001	0.001	<0.001	0.0001	0.005	<0.005
	26/08/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.005	<0.005
	23/09/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.005	0.009
	20/10/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.005	<0.005
	19/11/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.007	<0.005
B2GSW 1.40	16/12/20	No access							
	21/01/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.003	<0.005
	25/02/21	Dry at the time of sampling							
	25/03/21*	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005
	15/04/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	07/05/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.001	<0.005
	28/05/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	24/06/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	<0.005
	23/07/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	<0.001	0.008
	26/08/21	<0.001	<0.0002	<0.001	0.003	<0.001	<0.0001	0.002	<0.005
	23/09/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	0.007
	20/10/21	<0.001	<0.0002	0.002	0.002	<0.001	<0.0001	0.002	<0.005
	19/11/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
B2GSW 1.42	14/12/20	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.003	<0.005
	21/01/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.003	<0.005
	25/02/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.003	0.057
	25/03/21*	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	<0.001	<0.005

Site	Sample Date	Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)
ANZG WQO		0.024	0.0002	0.0033	0.0014	0.0034	0.0006	0.011	0.008
	15/04/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	07/05/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	28/05/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	<0.005
	24/06/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	0.007
	23/07/21 ^a	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.001	0.005
	26/08/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	0.009
	23/09/21	<0.001	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.002	0.005
	20/10/21	<0.001	<0.0002	<0.001	0.002	<0.001	<0.0001	0.002	<0.005
	19/11/21	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	<0.005

* High flow event

a Administrative error with date reported on water quality report from laboratory. No QA/QC violation detected.

Bold Exceeds ANZG WQO (2018)

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Table 5-6 Laboratory assessment of water hardness

Site	Sample Date	Hardness mg equivalent CaCO ₃ /L (mg/L)
B2GSW 1.2	14/12/20	120
	19/01/21	130
	24/02/21	No access
	23/03/21*	No access
	13/04/21	52
	05/05/21	23
	26/05/21	71
	22/06/21	42
	21/07/21	64
	24/08/21	56
	21/09/21	36
	18/10/21	48
	17/11/21	26
B2GSW 1.2R	14/12/20	130
	19/01/21	130
	24/02/21	No access
	23/03/21*	No access
	13/04/21	43
	05/05/21	31
	26/05/21	67
	22/06/21	100
	21/07/21	22
	24/08/21	60
	21/09/21	69

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	18/10/21	58
	17/11/21	27
B2GSW 1.3	15/12/20	94
	20/01/21	52
	24/02/21	31
	24/03/21*	No access
	14/04/21a	50
	06/05/21	21
	27/05/21	60
	23/06/21	62
	22/07/21	20
	25/08/21	62
	22/09/21	63
	19/10/21	55
	18/11/21	18
B2GSW 1.6	15/12/20	84
	20/01/21	72
	24/02/21	92
	24/03/21*	12
	14/04/21a	48
	06/05/21	26
	27/05/21	47
	23/06/21	41
	22/07/21	22
	25/08/21	49

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	22/09/21	52
	19/10/21	48
	18/11/21	21
B2GSW 1.7	14/12/20	160
	19/01/21	88
	24/02/21	91
	24/03/21*	19
	14/04/21	47
	05/05/21	34
	26/05/21	65
	22/06/21	38
	21/07/21	21
	24/08/21	52
	21/09/21	39
	18/10/21	52
	17/11/21	23
B2GSW 1.11	15/12/20	65
	20/01/21	55
	24/02/21	64
	24/03/21*	21
	14/04/21a	48
	06/05/21	22
	27/05/21	49
	23/06/21	36
	22/07/21	47

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	25/08/21	
	22/09/21	52
	19/10/21	64
	18/11/21	19
B2GSW 1.14	14/12/20	Dry at the time of sampling
	19/01/21	
	24/02/21	
	24/03/21*	
	13/04/21	
	05/05/21	
	27/05/21	
	23/06/21	
	22/07/21	
	25/08/21	
	22/09/21	
	19/10/21	
	18/11/21	
B2GSW 1.16	14/12/20	No access
	20/01/21	68
	24/02/21	73
	24/03/21*	30
	14/04/21a	49
	06/05/21	26
	27/05/21	51
	23/06/21	457

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	22/07/21	23
	25/08/21	50
	22/09/21	56
	19/10/21	67
	18/11/21	21
B2GSW 1.18	15/12/20	Dry at the time of sampling
	19/01/21	65
	23/02/21	41
	23/03/21*	37
	13/04/21	46
	06/05/21	24
	27/05/21	53
	23/06/21	36
	22/07/21	23
	25/08/21	47
	22/09/21	51
	19/10/21	54
	18/11/21	26
B2GSW 1.20R2	15/12/20	Dry at the time of sampling
	19/01/21	
	23/02/21	
	23/03/21*	64
	13/04/21	Dry at the time of sampling
	06/05/21	
	27/05/21	45

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	23/06/21	Dry at the time of sampling
	22/07/21	Not Representative
	25/08/21	
	22/09/21	
	19/10/21	
	18/11/21	
B2GSW 1.23	15/12/20	Dry at the time of sampling
	20/01/21	50
	23/02/21	72
	23/03/21*	35
	14/04/21a	50
	06/05/21	33
	27/05/21	63
	23/06/21	49
	22/07/21	26
	25/08/21	52
	22/09/21	60
	19/10/21	Not Representative
	18/11/21	34
B2GSW 1.24	16/12/20	Dry at time of sampling
	20/01/21	42
	23/02/21	58
	25/03/21*	32
	14/04/21a	37
	06/05/21	22

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	27/05/21	44
	23/06/21	31
	22/07/21	15
	25/08/21	43
	22/09/21	51
	19/10/21	51
	18/11/21	26
B2GSW 1.27	15/12/20	Dry at time of sampling
	20/01/21	76
	24/02/21	110
	23/03/21*	72
	14/04/21a	69
	06/05/21	37
	27/05/21	84
	23/06/21	72
	22/07/21	31
	25/08/21	67
	22/09/21	120
	19/10/21	77
	18/11/21	25
B2GSW 1.29	15/12/20	Dry at time of sampling
	20/01/21	
	24/02/21	
	24/03/21*	
	14/04/21a	79

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	06/05/21	41
	27/05/21	62
	23/06/21	Not representative
	22/07/21	Not representative
	25/08/21	Dry at time of sampling
	22/09/21	
	19/10/21	Not representative
	18/11/21	No access
B2GSW 1.30	15/12/20	Dry at time of sampling
	20/01/21	70
	23/02/21	110
	23/03/21*	55
	14/04/21	66
	06/05/21	26
	27/05/21	47
	23/06/21	75
	22/07/21	35
	25/08/21	61
	22/09/21	120
	19/10/21	Not representative
	18/11/21	42
B2GSW 1.32	15/12/20	Dry at the time of sampling
	20/01/21	
	24/02/21	
	24/03/21*	74

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	14/04/21a	67
	06/05/21	42
	27/05/21	77
	23/06/21	44
	22/07/21	37
	25/08/21	71
	22/09/21	Dry at the time of sampling
	19/10/21	
	18/11/21	51
B2GSW 1.33	15/12/20	Dry at the time of sampling
	21/01/21	120
	25/02/21	180
	24/03/21	No access
	14/04/21a	75
	06/05/21	30
	27/05/21	77
	23/06/21	140
	22/07/21	33
	25/08/21	55
	22/09/21	Not Representative
	19/10/21	70
	18/11/21	22
B2GSW 1.39	16/12/20	No access
	21/01/21	280
	25/02/21	500

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	25/03/21*	110
	15/04/21	310
	06/05/21	96
	28/05/21	440
	24/06/21	230
	23/07/21	150
	26/08/21	560
	23/09/21	620
	20/10/21	200
	19/11/21	81
B2GSW 1.40	16/12/20	No access
	21/01/21	210
	25/02/21	Dry at the time of sampling
	25/03/21*	220
	15/04/21	430
	07/05/21	87
	28/05/21	400
	24/06/21	190
	23/07/21	100
	26/08/21	330
	23/09/21	440
	20/10/21	240
	19/11/21	51
B2GSW 1.42	14/12/20	160
	21/01/21	300

Site	Sample Date	Hardness mg equivalent CaCO3/L (mg/L)
	25/02/21	510
	25/03/21*	260
	15/04/21	460
	07/05/21	100
	28/05/21	420
	24/06/21	210
	23/07/21 ^a	170
	26/08/21	410
	23/09/21	360
	20/10/21	300
	19/11/21	85

* Flood flow event

a Administrative error with date reported on water quality report from laboratory. No QA/QC violation detected.

5.5 Field Assessed Data

Water quality field data for the monitoring program (including twelve routine and one high flow event) is presented in Table 5-7. Field data reporting sheets are presented in Appendix D.

Table 5-7 Field assessed physico-chemical water quality

Site	Sample Date	pH (Log H ⁺)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
Basin Plan WQO	Low flow	7.4 to 8.0	240	-	60 to 110	-	-
	High flow	7.0 to 7.5	180	-	60 to 110	-	-
B2GSW 1.2	14/12/20	8.04	N/A	4.53	55.3	25.2	N/A
	19/01/21	7.84	340	7.86	103.5	29.5	N/A
	24/02/21	No access					
	23/03/21*	No access					
	13/04/21	6.75	224.6	4.62	52.1	25.0	146.25
	05/05/21	7.09	372.5	4.67	50	18.7	241.80
	26/05/21	7.30	364.4	6.40	66.2	16.8	236.60
	22/06/21	7.13	269.7	8.56	81.7	13.0	174.85
	21/07/21	7.14	178.8	9.16	85.2	12.2	116.35
	24/08/21	7.12	271.0	7.88	80.9	16.9	176.15
	21/09/21	7.83	340.5	8.23	90	19.7	221.00
	18/10/21	7.53	245.8	7.33	83.4	21.7	159.50
	17/11/21	6.69	186.8	6.10	70.2	22.2	121.55
	14/12/20	8.28	N/A	5.49	66.7	25.3	N/A
B2GSW 1.2R	19/01/21	7.95	342.4	7.9	105	29.7	N/A
	24/02/21	No access					
	23/03/21*	No access					
	13/04/21	7.00	215.8	5.98	66.3	20.4	140.40
	05/05/21	7.34	358.6	NA	NA	18.7	233.35
	26/05/21	7.56	359.0	6.06	62.6	16.8	233.35
	22/06/21	7.66	263.6	8.21	79.4	13.1	171.60
	21/07/21	7.13	181.9	9.02	84.4	12.2	118.30

Site	Sample Date	pH (Log H+)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	24/08/21	7.22	269.2	7.86	81.2	16.9	174.85
	21/09/21	7.12	336.7	8.05	86.7	19.6	218.40
	18/10/21	7.56	244.1	7.38	83.2	21.3	158.60
	17/11/21	6.68	196.3	5.72	67.6	22.3	127.40
Basin Plan WQO	Low flow	7.4 to 8.0	370	-	60 to 110	-	-
	High flow	7.2 to 8.0	250	-	60 to 110	-	-
B2GSW 1.3	15/12/20	7.56	N/A	5.41	63.2	23.1	N/A
	20/01/21	6.78	165.4	2.40	29.2	25.2	N/A
	24/02/21	7.17	206.0	4.97	61	25.9	14.55
	24/03/21*	No access					
	14/04/21	7.18	270.8	7.24	77.7	18.8	176.15
	06/05/21	7.24	405.1	5.09	52.2	16.6	263.25
	27/05/21	7.37	424.3	5.86	56.6	13.7	275.60
	23/06/21	7.55	536.5	8.74	81.1	11.4	348.40
	22/07/21	7.31	213.4	9.43	87.5	12.0	138.45
	25/08/21	7.34	356.2	6.33	61.9	14.3	231.40
	22/09/21	7.25	374.3	5.88	59.1	15.5	243.10
	19/10/21	7.16	318.4	5.33	57.7	19.2	206.70
	18/11/21	7.11	229.8	6.74	76.3	21.4	149.50
B2GSW 1.6	15/12/20	7.74	N/A	5.00	58.8	22.9	N/A
	20/01/21	6.80	235.4	0.93	10.9	23.4	N/A
	24/02/21	7.03	371.0	2.76	33.5	25.2	265.20
	24/03/21*	6.08	88.7	4.48	52.6	22.8	57.85
	14/04/21	7.03	680.3	6.30	67.2	18.4	182.00
	06/05/21	7.23	297.1	4.98	50.3	16.2	457.20

Site	Sample Date	pH (Log H+)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	27/05/21	7.5	555.0	5.92	56.6	13.3	360.75
	23/06/21	7.45	385.1	8.36	74.3	11.3	198.25
	22/07/21	7.18	240.8	8.35	76.7	12.7	156.65
	25/08/21	7.3	367.4	6.11	59.1	13.8	238.55
	22/09/21	7.44	537.2	5.97	58.9	14.7	349.05
	19/11/21	7.23	310.1	5.20	55.6	18.6	201.50
	18/11/2021	6.56	229.3	5.52	62.3	21.3	148.85
B2GSW 1.7	14/12/20	7.73	N/A	8.03	94	23.1	N/A
	19/01/21	7.29	353.6	7.28	96.5	30.1	N/A
	24/02/21	7.21	350.0	4.16	51.3	26.1	249.60
	24/03/21*	5.80	93.0	5.2	60.1	22.2	60.45
	14/04/21	7.07	266.0	6.34	68.3	18.9	196.90
	05/05/21	7.25	468.0	6.15	63.8	17.1	304.20
	26/05/21	7.27	499.2	4.89	47.5	14.3	324.35
	22/06/21	7.51	284.4	9.13	84.6	11.8	184.60
	21/07/21	7.16	221.7	8.8	83.2	12.8	144.30
	24/08/21	7.01	367.2	6.41	65.6	16.4	238.55
	21/09/21	7.47	487.8	7.11	76.3	18.7	317.20
	18/10/21	7.2	294.9	4.77	52.1	19.7	191.75
	17/11/2021	6.93	230.1	6.93	70.7	21.6	149.50
Basin Plan WQO	Low flow	7.2 to 7.8	200	-	60 to 110	-	-
	High flow	6.9 to 7.9	165	-	60 to 110	-	-
B2GSW 1.11	15/12/20	7.77	N/A	5.84	71.7	25.9	N/A
	20/01/21	7.12	175.6	5.95	76.4	27.9	N/A
	24/02/21	7.28	203.0	3.95	52.4	28.3	144.95

Site	Sample Date	pH (Log H+)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	24/03/21*	6.65	101.5	5.18	57.2	22.6	66.65
	14/04/21	6.93	265.3	4.18	44.9	18.7	172.90
	06/05/21	7.00	324.7	2.78	27.6	15.4	210.60
	27/05/21	7.13	344.5	3.24	32	14.3	222.95
	23/06/21	7.11	298.6	4.08	36.5	10.7	194.35
	22/07/21	Not accessible					
	25/08/21	7.39	317.1	4.99	46	12.1	206.05
	22/09/21	7.12	358.8	5.60	55.6	15.0	231.40
	19/10/21	7.12	367.4	3.50	38.7	20.1	241.15
	18/11/2021	6.77	160.2	4.60	50.7	20.1	104.65
B2GSW 1.14	14/12/20	Dry at the time of sampling					
	19/01/21						
	24/02/21						
	24/03/21*						
	13/04/21						
	05/05/21						
	27/05/21						
	23/06/21						
	22/07/21						
	25/08/21						
	22/09/21						
	19/10/21						
	18/11/2021						
B2GSW 1.16	No access at time of December 2020 sampling						
	20/01/21	7.21	198.6	5.19	65.5	27.5	N/A

Site	Sample Date	pH (Log H ⁺)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	24/02/21	7.58	206.0	4.85	60.2	28.0	146.90
	24/03/21*	6.38	165.7	5.93	69.9	23.5	107.90
	14/04/21	7.16	193.5	3.62	37	16.3	126.10
	06/05/21	7.36	209.4	4.92	49.6	15.6	135.85
	27/05/21	7.59	212.1	4.74	46.1	14.0	137.80
	23/06/21	7.34	289.5	7.57	74.3	14.3	186.20
	22/07/21	7.32	212.3	7.48	66.8	10.3	138.45
	25/08/21	7.44	221.2	6.30	60.3	13.2	143.65
	22/09/21	7.68	262.9	8.10	78.2	13.8	170.95
	19/10/21	7.54	295.1	6.48	69.2	17.7	190.45
	18/11/2021	6.9	154.0	6.20	72.4	23.0	100.10
B2GSW 1.18	15/12/20	Dry at the time of sampling					
	19/01/21	7.21	208.7	3.45	44.7	28.8	N/A
	23/02/21	7.47	195.0	2.66	34.5	29.6	138.45
	23/03/21*	6.99	141.7	6.78	78.9	22.7	92.30
	13/04/21	7.7	155.8	5.77	66.6	22.2	106.60
	06/05/21	7.35	196.3	5.25	52.7	15.8	127.40
	27/05/21	7.45	198.6	3.40	31.5	12.1	129.35
	23/06/21	7.26	201.7	6.23	55.6	10.0	131.30
	22/07/21	7.23	188.7	6.58	60	10.6	122.85
	25/08/21	7.36	196.3	6.54	64	13.7	128.05
	22/09/21	7.34	211.1	7.42	75.3	15.8	137.15
	19/10/21	7.42	224.8	7.23	80.4	20.8	142.40
	18/11/2021	6.97	187.2	6.00	69.9	22.6	121.55
	15/12/20	Dry at the time of sampling					

Site	Sample Date	pH (Log H+)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
B2GSW 1.20R2	19/01/21						
	23/02/21						
	23/03/21*	7.42	239.8	6.49	73.5	22.4	156.00
	13/04/21	Dry at the time of sampling					
	06/05/21						
	27/05/21	8.96	765.0	8.18	76.8	12.4	494.00
	23/06/21	Dry at the time of sampling					
	22/07/21	Not Representative					
	25/08/21						
	22/09/21						
	19/10/21						
	18/11/2021							Dry at the time of sampling
Basin Plan WQO	Low flow	7.2 to 7.9	170	-	60 to 110	-	-
	High flow	7.0 to 7.6	160	-	60 to 110	-	-
B2GSW 1.23	15/12/20	Dry at the time of sampling					
	20/01/21	6.79	184.9	0.09	1.1	24.5	N/A
	23/02/21	7.96	221.0	8.73	113.3	31.7	157.30
	23/03/21*	6.98	129.0	14.89	56.8	21.0	83.85
	14/04/21	9.29	351.3	17.71	207.2	20.5	228.15
	06/05/21	7.91	359.1	8.24	83	16.5	234.00
	27/05/21	7.86	341.7	1.95	19.2	14.0	222.30
	23/06/21	8.5	344.3	15.73	149.1	12.3	223.10
	22/07/21	7.01	236.6	7.23	67.6	12.1	152.75
	25/08/21	7.81	242.1	7.67	74.6	13.8	157.30
	22/09/21	8.27	274.7	11.12	111.9	15.9	176.80

Site	Sample Date	pH (Log H ⁺)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
B2GSW 1.24	19/10/21	Not Representative					
	18/11/2021	7.81	210.6	8.37	92.6	20.6	137.80
	16/12/20	Dry at time of sampling					
	20/01/21	8.48	218.8	11.4	157.3	32.6	N/A
	23/02/21	8.27	198.0	2.46	13.7	32.3	14.40
	25/03/21*	6.95	137.9	1.54	17.8	22.8	89.10
	14/04/21	7.11	205.6	3.47	39	19.9	133.25
	06/05/21	7.13	216.9	28.4	28.4	16.8	141.05
	27/05/21	7.28	269.1	2.75	26.5	14.5	174.85
	23/06/21	7.2	229.3	6.41	64.5	15.6	149.50
	22/07/21	7.01	167.1	7.88	78.1	17.1	108.55
	25/08/21	7.09	212.4	5.42	53.2	14.2	157.30
	22/09/21	7.2	197.8	6.07	60.1	15.0	128.70
	19/10/21	7.22	225.4	5.99	68.5	21.7	160.55
	18/11/2021	6.85	198.5	3.51	43.4	26.1	129.35
Basin Plan WQO	Low flow	7.4 to 8.3	890	-	60 to 110	-	-
	High flow	7.0 to 7.6	290	-	60 to 110	-	-
B2GSW 1.27	15/12/20	Dry at time of sampling					
	20/01/21	7.57	255.3	6.16	80.2	29.0	N/A
	24/02/21	8.87	277.0	7.37	94.0	27.9	197.60
	23/03/21*	6.61	193.6	6.39	72.9	21.8	126.10
	14/04/21	7.87	235.8	8.13	89.9	19.8	170.30
	06/05/21	8.47	313.8	8.32	87.2	17.1	20.10
	27/05/21	8.73	351.3	9.14	94.5	17.6	228.45
	23/06/21	8.49	984.3	10.76	106	14.6	249.60

Site	Sample Date	pH (Log H+)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	22/07/21	7.38	295.5	9.88	91.2	11.8	192.40
	25/08/21	8.21	408.0	9.09	93.3	16.6	265.20
	22/09/21	8.64	472	9.45	101.6	19.4	306.80
	19/10/21	7.28	109.5	6.68	74.2	20.5	71.50
	18/11/2021	7.53	280.4	6.68	76.8	22.2	182.00
B2GSW 1.29	15/12/20	Dry at time of sampling					
	20/01/21						
	24/02/21						
	24/03/21*	No access					
	14/04/21	7.5	288.1	6.6	70.2	19.0	158.90
	06/05/21	7.49	310.0	4.41	46.7	18.0	201.50
	27/05/21	7.47	277.9	2.65	26.1	14.8	180.70
	23/06/21	Not representative					
	22/07/21	Not representative					
	25/08/21	Dry at time of sampling					
	22/09/21						
	19/10/21	Not representative					
	18/11/2021	No access					
B2GSW 1.30	15/12/20	Dry at time of sampling					
	20/01/21	7.83	242.2	7.18	93.4	28.9	N/A
	23/02/21	8.42	233.0	7.03	90.1	30.0	165.75
	23/03/21*	7.6	275.5	7.21	83.9	22.4	178.75
	14/04/21	7.95	259.3	8.3	92.4	20.7	168.35
	06/05/21	8.54	318.5	8.42	87.6	17.2	207.35
	27/05/21	8.09	325.3	8.09	80.6	14.7	211.25

Site	Sample Date	pH (Log H ⁺)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	23/06/21	8.52	392.7	10.4	101.8	14.4	255.45
	22/07/21	7.66	294.2	10.31	95.2	11.6	191.10
	25/08/21	8.26	409.8	8.79	89.7	16.3	266.50
	22/09/21	8.37	464.2	9.31	105.1	21.2	306.60
	19/10/21	Not representative					
	18/11/2021	7.46	273.9	7.03	82.9	23.6	178.10
B2GSW 1.32	15/12/20	Dry at the time of sampling					
	20/01/21						
	24/02/21						
	24/03/21*	6.77	222.3	3.95	47.5	23.6	144.30
	14/04/21	7.54	241.2	5.92	61.6	20.3	172.25
	06/05/21	7.63	397.1	5.59	57.4	16.6	225.50
	27/05/21	8.01	363.3	7.35	73.4	15.3	235.95
	23/06/21	8.17	385.8	11.16	112	15.0	251.55
	22/07/21	7.59	300.3	9.73	90.2	11.9	195.65
	25/08/21	8.39	457.5	10.01	104	17.0	297.70
	22/09/21	Dry at the time of sampling					
	19/10/21						
	18/11/2021	7.32	282.4	6.07	69.5	22.0	183.30
B2GSW 1.33	15/12/20	Dry at the time of sampling					
	21/01/21	7.19	363.0	0.51	6.2	25.0	N/A
	25/02/21	7.53	495.0	3.4	38.6	25.0	351.00
	24/03/21	No access					
	14/04/21	7.76	257.9	7.11	78.5	20.1	167.70
	06/05/21	7.59	340.3	5.99	62.8	17.3	221.00

Site	Sample Date	pH (Log H+)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	27/05/21	8.57	345.1	6.92	70.6	16.4	224.25
	23/06/21	8.11	379.9	10.83	106.1	14.5	247.00
	22/07/21	7.71	298.3	9.74	88.3	10.7	193.7
	25/08/21	8.27	382.7	11.21	111	14.7	248.95
	22/09/21	Not Representative					
	19/10/21	7.37	256.9	5.82	74.5	28.1	167.05
	18/11/2021	7.41	280.5	6.86	78.7	22.7	182.65
Basin Plan WQO	Low flow	7.7 to 8.3	510	-	60 to 110	-	-
	High flow	7.4 to 8.1	375	-	60 to 110	-	-
B2GSW 1.39	15/12/20	No access					
	21/01/21	7.59	885.0	5.01	58.8	23.2	NA
	25/02/21	8.16	1440	4.91	58.1	24.4	1027.0
	25/03/21*	7.37	408.8	3.9	45.9	23.9	265.85
	15/04/21	7.58	1236	5.43	57.1	17.7	806.00
	06/05/21	7.93	985	5.72	56.6	14.6	643.50
	28/05/21	7.90	1774	7.25	74.0	14.4	1150.50
	24/06/21	7.97	2151	9.34	109.4	12.8	1397.50
	23/07/21	7.90	1761	8.1	73.9	11.0	1144.00
	26/08/21	8.29	2317	5.87	56.5	13.3	1501.50
	23/09/21	7.96	2535	4.95	50.3	15.8	1644.50
	20/10/21	7.79	861.0	5.52	58.8	18.3	559.00
	19/11/2021	7.49	1003	3.58	39.8	20.0	650.00
B2GSW 1.40	16/12/20	No access					
	21/01/21	8.39	585.0	10.20	118.8	22.9	N/A
	25/02/21	Dry at the time of sampling					

Site	Sample Date	pH (Log H ⁺)	Specific EC (µS/cm @ 25°C)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (%)	Water Temperature (°C)	TDS (mg/L)
	25/03/21*	8.34	630	9.15	93.8	18.3	922.50
	15/04/21	8.54	1337	9.51	92.8	14.1	871.00
	07/05/21	8.39	855	8.63	82.8	13.4	552.50
	28/05/21	8.66	1395	9.29	83.1	10.3	903.50
	24/06/21	8.54	1041	9.34	88.2	12.6	910.00
	23/07/21	8.58	1474	10.1	89	9.6	955.50
	26/08/21	8.49	1168	8.67	76.9	10.0	760.50
	23/09/21	8.54	1433	9.39	84.9	10.7	929.50
	20/10/21	8.31	759.0	8.36	85.4	16.3	494.00
	19/11/2021	8.04	419.5	8.06	83.3	16.9	273.00
B2GSW 1.42	14/12/20	8.28	N/A	7.26	83	21.9	N/A
	21/01/21	8.19	817.0	9.10	106	22.8	N/A
	25/02/21	8.25	1376	8.84	108.1	25.2	981.50
	25/03/21*	7.88	775.0	7.13	87.2	25.4	500.00
	15/04/21	8.39	1399	9.87	97.4	14.4	910.00
	07/05/21	8.39	1142	9.13	88.4	13.7	741.00
	28/05/21	8.54	1443	11.58	98.6	8.2	936.00
	24/06/21	8.43	1432	10.29	98.7	13.3	929.50
	23/07/21	8.44	1501	10.16	92.3	10.8	975.00
	26/08/21	8.47	1368	10.48	88.6	7.9	890.50
	23/09/21	8.4	1524	10.57	94.3	10.1	988.00
	20/10/21	8.29	895.0	7.63	81.9	18.6	578.50
	19/11/2021	8.16	631.0	7.96	85.4	18.7	409.50

* Flood flow event

Bold = Exceeds Regional WQO

6 Conclusion

This final factual report details the recorded results from the 13 monitoring events including 12 routine events and one flood event monitoring event. The water quality was assessed against regional water quality objectives.

Exceedances were noted in sites across each of the Oakey Creek, central Condamine River and Macintyre Brook, catchments. A large degree of regional water quality objectives exceedances were noted for the following parameters:

- Total Phosphorous
- Filterable Phosphorous
- Ammonia
- Total Nitrogen
- Nitrate and Nitrite
- Soluble Copper
- Soluble Zinc

No quantities of PAH above laboratory limits or reporting were reported for any of the sampled sites.

The data identified within this factual report will be used for the derivation of the site-specific objectives in the sister report '*Border to Gowrie - Surface Water Quality Monitoring Program site-specific water quality objective derivation*'.

7 References

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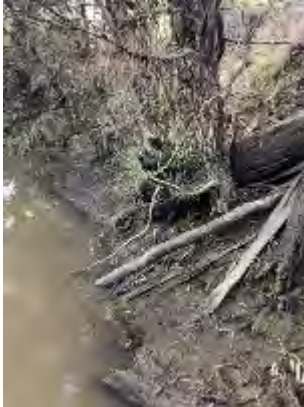
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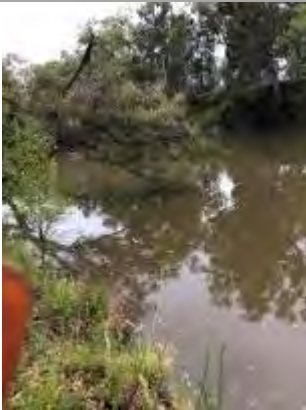
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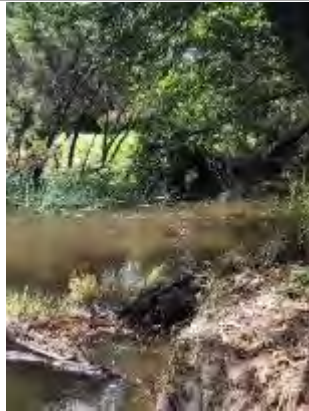
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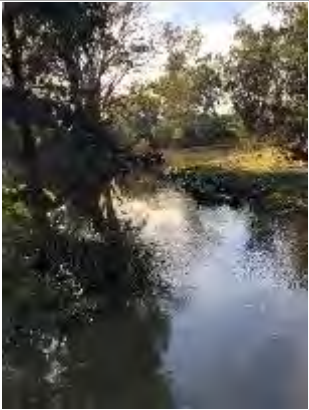
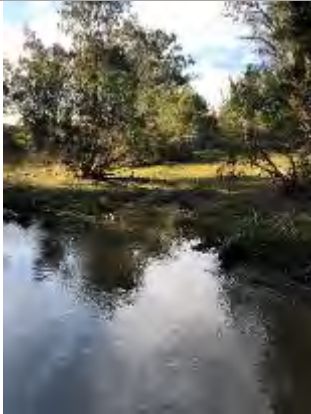
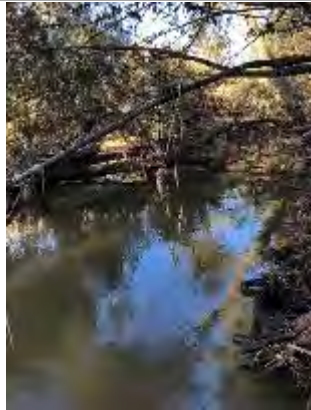
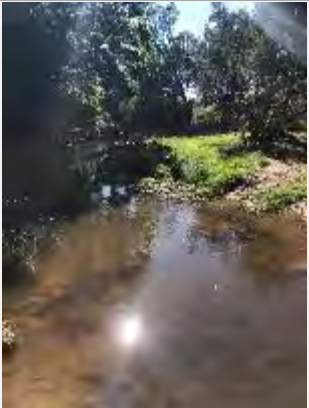
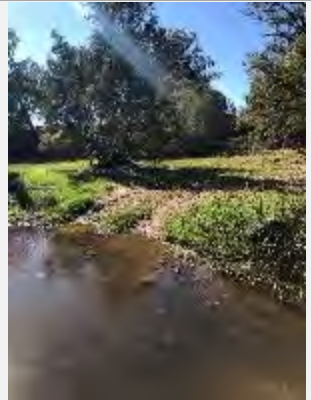
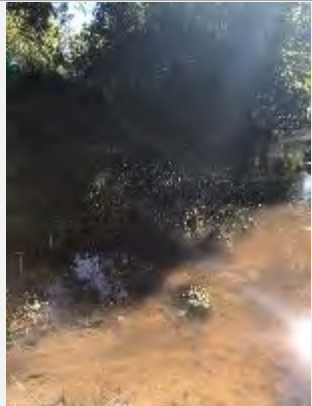
Appendix A: Indicative site photos

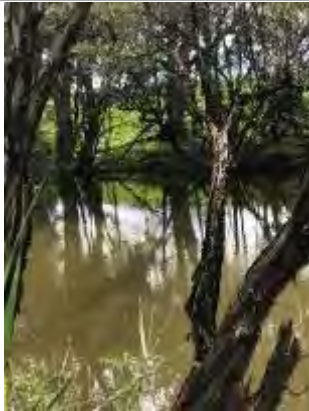
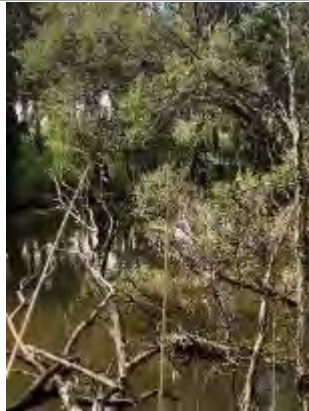
Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
B2GSW01.2	December 2020				
	February 2021	N/A	N/A	N/A	N/A
	June 2021			N/A	

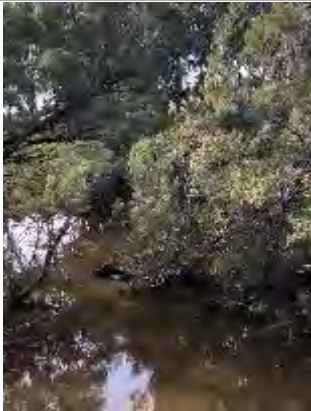
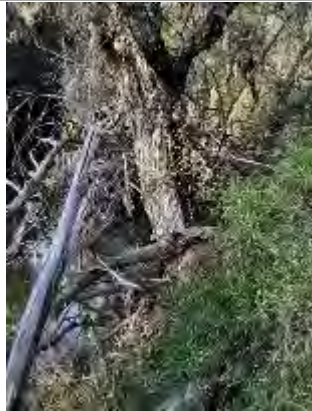
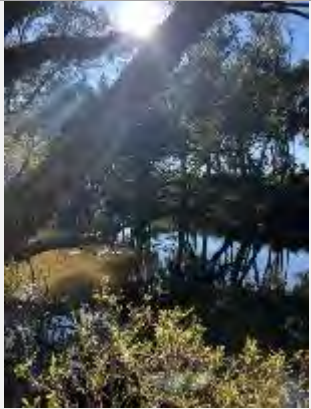
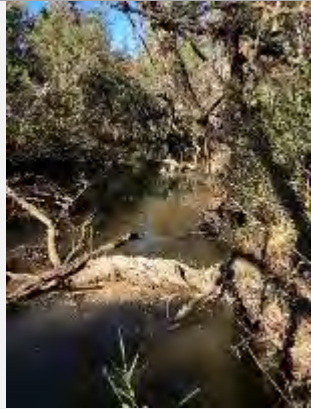
Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	September 2021				
B2GSW01.2R	December 2020				
	February 2021	N/A	N/A	N/A	N/A

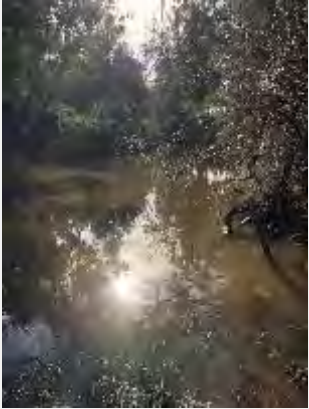
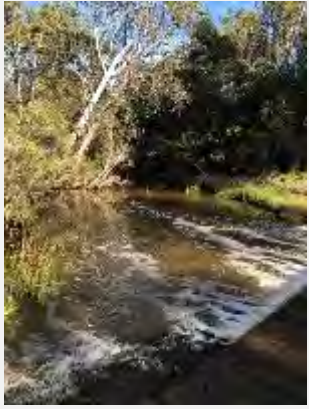
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	June 2021				
	September 2021				

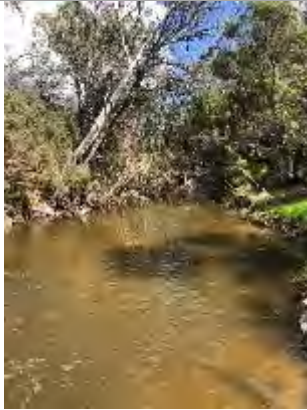
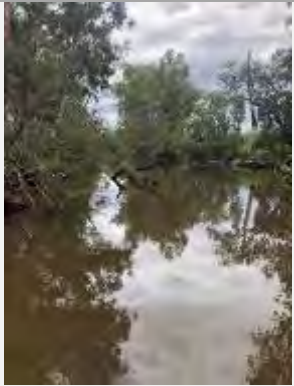
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B2HSW01.3	December 2020				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
B2GSW01.6	December 2020				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
B2GSW01.7	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	September 2021				
B2GSW01.11	December 2020				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	September 2021				
B2GSW01.14	January 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	September 2021				
B2GSW01.16	January 2021				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

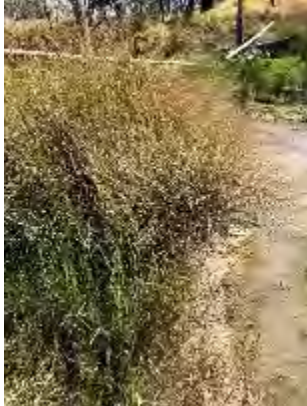
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B2GSW01.18	December 2020				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

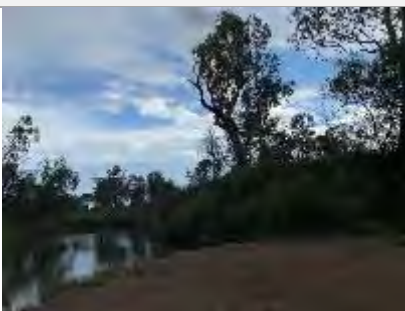
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	February 2021				

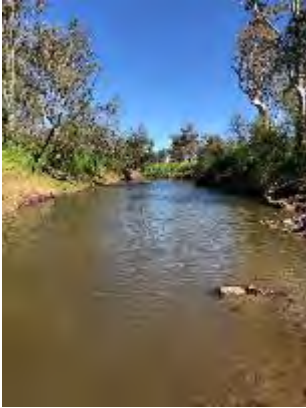
Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
B2GSW01.23	December 2020				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
B2GSW01.24	January 2021				
	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	September 2021				
B2GSW01.27	January 2021				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021	N/A	N/A	N/A	N/A
	September 2021				
B2GSW01.29	December 2020			N/A	

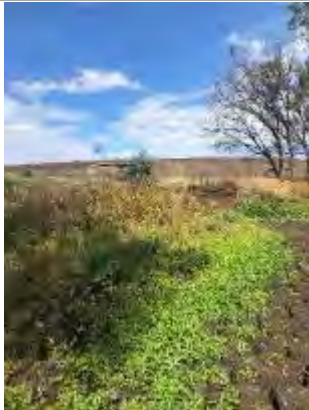
Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	September 2021				
B2GSW01.30	December 2020				

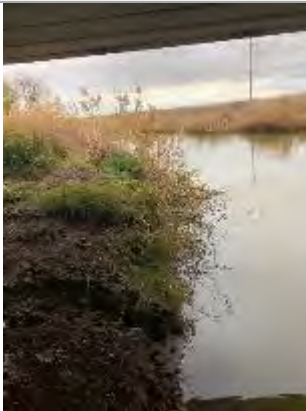
Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	September 2021				
B2GSW01.32	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
B2GSW01.33	December 2020				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021				
	September 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
B2GSW01.39	January 2021				
	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	October 2021				
B2GSW01.40	January 2021				
	February 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	June 2021	N/A	N/A	N/A	N/A
	October 2021				
B2GSW01.42	December 2020				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	February 2021				
	June 2021				

Survey Site	Survey Timing	Upstream	Right-hand Bank	Downstream	Left-hand bank
	October 2021				

Appendix B

General field assessment water quality conditions

Table C.1 Monitoring site description with indicative photos

Site	Description	Photo
1R B2G Macintyre River	The site was located on the Macintyre River, upstream from the Project alignment. Pooled water was present, with no fish passage, however during high flow, fish passage would be moderate. The riparian vegetation present included shrubs and trees. Surrounding land uses included non-irrigated cropping and semi-urban.	
2R B2G Macintyre Brook	The site was located on the Macintyre River, downstream from the Project alignment. Both banks had presence of riparian vegetation including trees and shrubs. No barriers to fish movement were observed. There was water extraction infrastructure observed at the site. The surrounding land uses included industrial and moderate grazing.	
3 B2G Macintyre Brook	The site was located on Macintyre Brook downstream from the Project alignment. Both banks retained riparian vegetation including trees and shrubs. No barriers to fish movement were observed. The surrounding land uses were principally light grazing road structure.	

Site	Description	Photo
6 B2G Macintyre Brook	The site was located on the Macintyre Brook, downstream from the Project alignment. The water was considered a deep pool with riparian vegetation present on either side of the banks. During high flow, moderate fish passage would be achieved with natural vegetation barriers within the water. Surrounding land uses included irrigated cropping.	
7 B2G Macintyre Brook	The site was located on the Macintyre River, downstream of the Project alignment. The riparian vegetation included shrubs and trees. Notable fish barriers included artificial bridge structure and a pipe culvert, causing barriers to fish movement. Surrounding land uses included cropping.	
B2G 11 Canning Creek	The site was located on Canning Creek, downstream of the Project alignment. Riparian vegetation was present, predominantly as grasses and shrubs. Pooled water was identified, providing limited fish passage, however in high flow, moderate fish passage would be facilitated. Surrounding land uses included moderate grazing.	

Site	Description	Photo
B2G 14 Un-named	The site was located on an un-named tributary within the Canning Creek water quality zone. Water was pooled providing no fish passage, however during high flow fish passage would be moderately restricted. Minimal riparian vegetation was present.	
B2G 16 Un-named	The site was located on an un-named tributary within the Canning Creek Water Quality zone on the Project alignment corridor. The water present was in a deep pool providing no fish passage, however during high flow passage would improve to be moderately restricted. Riparian vegetation was limited to shrubs with minimal trees present.	
B2G 24 Grasstree Creek	The site was located on Grasstree Creek, upstream of the Project alignment. The water was pooled with no fish passage, however during high flow fish passage would improve to be moderately restricted. There was limited riparian vegetation present. Surrounding land uses included light grazing.	

Site	Description	Photo
B2G 27 Condamine River	The site was located on the Condamine River, upstream of the Project alignment. During the investigation there was a small isolated pool present. The assessment site was considered to have no fish passage, and during high flow would restrict fish passage. The riparian vegetation present is predominately consisted of grasses and shrubs with minimal tree coverage. Surrounding land uses included agricultural use.	
B2G 30 Condamine River	The site was located on the Condamine River, downstream of the Project alignment. The water was in the form of a pool and run, providing moderate fish passage. The riparian vegetation contains a mixture of grasses, shrubs and trees. Within the watercourse, an artificial weir was present. The surrounding land use included irrigated cropping.	
B2G 33 Condamine River (North Branch)	The site was located on the Condamine River (North Branch), downstream of the Project alignment. The site was dry at the time of assessment. Riparian vegetation was present as a mixture of grasses, shrubs and trees. The surrounding land uses included cropping.	

Site	Description	Photo
B2G 39 Westbrook Creek	The site was located on Westbrook Creek, downstream of the Project alignment. Pooled water was present, providing no fish passage, however during high flow fish passage would improve to be moderately restricted. The riparian vegetation present is predominantly contained grasses with minimal shrub coverage. The surrounding land uses included grazing.	
B2G 40 Dry Creek	The site was located on Dry Creek, downstream of the Project alignment. There was a shallow pool of water present providing no fish passage, however during high flow there would be moderate fish passage. Limited riparian vegetation was present with pasture surrounding the watercourse.	
B2G 42 Dry Creek	The site was located on Dry Creek, downstream of the Project alignment. There was a pool of water present providing no fish passage, however during high flow fish passage would be moderate. The riparian vegetation predominantly consisted of grasses. The surrounding land uses included pasture and light grazing.	

Table note:

Sites that were not suitable for water quality sampling assessment are omitted from this table

Appendix C

Laboratory Water Reports

DRAFT

Aurecon Australia (BRIS) Pty Ltd
Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006



NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **James Bone**

Report **764208-W**
Project name **B2G SWQ**
Received Date **Dec 16, 2020**

Client Sample ID			B2GSW1.2	B2GSW1.2R	B2GSW1.3	B2GSW1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B20-De34082	B20-De34083	B20-De34084	B20-De34085
Date Sampled			Dec 14, 2020	Dec 14, 2020	Dec 15, 2020	Dec 15, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	51	58	57	89
p-Terphenyl-d14 (surr.)	1	%	61	68	122	98
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.03	0.02
Chlorophyll a	5	ug/L	< 5	< 5	6.4	< 5
Conductivity (at 25°C)	10	uS/cm	380	340	420	360
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.04	0.04	0.04	0.02
Phosphorus reactive (as P)	0.01	mg/L	0.01	0.03	< 0.01	< 0.01
Salinity (determined from EC)*	20	mg/L	180	160	200	170
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.7	0.6	0.8	0.7
Total Nitrogen (as N)*	0.2	mg/L	0.7	0.6	0.8	0.7
Total Suspended Solids Dried at 103–105°C	1	mg/L	34	16	12	18
Turbidity	1	NTU	27	23	8.0	13

Client Sample ID			B2GSW1.2	B2GSW1.2R	B2GSW1.3	B2GSW1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B20-De34082	B20-De34083	B20-De34084	B20-De34085
Date Sampled			Dec 14, 2020	Dec 14, 2020	Dec 15, 2020	Dec 15, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.003	0.004	0.002	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.003	< 0.001	0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	19	27	19	18
Hardness mg equivalent CaCO ₃ /L	5	mg/L	120	130	94	84
Magnesium	0.5	mg/L	16	15	11	9.7

Client Sample ID			B2GSW1.7	B2GSW1.11	B2GSW1.42	DUP
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B20-De34086	B20-De34087	B20-De34088	B20-De34089
Date Sampled			Dec 14, 2020	Dec 15, 2020	Dec 16, 2020	Dec 14, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	61	83	79	93
p-Terphenyl-d14 (surr.)	1	%	67	92	77	92
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.02	0.03
Chlorophyll a	5	ug/L	< 5	6.4	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	320	290	400	330
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	0.54	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	0.53	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.02	0.05	0.16	0.04
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	0.33	0.31	0.02
Salinity (determined from EC)*	20	mg/L	150	140	190	160

Client Sample ID			B2GSW1.7	B2GSW1.11	B2GSW1.42	DUP
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B20-De34086	B20-De34087	B20-De34088	B20-De34089
Date Sampled			Dec 14, 2020	Dec 15, 2020	Dec 16, 2020	Dec 14, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.8	0.7	0.3	0.5
Total Nitrogen (as N)*	0.2	mg/L	0.8	0.7	0.84	0.5
Total Suspended Solids Dried at 103–105°C	1	mg/L	14	9.6	130	26
Turbidity	1	NTU	120	17	120	28
Arsenic (filtered)	0.001	mg/L	0.001	0.003	< 0.001	0.003
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	0.001	0.003	0.003
Zinc (filtered)	0.005	mg/L	< 0.005	0.006	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	26	13	25	21
Hardness mg equivalent CaCO ₃ /L	5	mg/L	160	65	160	130
Magnesium	0.5	mg/L	23	8.0	24	18

Client Sample ID			FIELD B
Sample Matrix			Water
Eurofins Sample No.			B20-De34090
Date Sampled			Dec 15, 2020
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	87
p-Terphenyl-d14 (surr.)	1	%	132
Ammonia (as N)			
Ammonia (as N)	0.01	mg/L	< 0.01
Chlorophyll a			
Chlorophyll a	5	ug/L	< 5
Conductivity (at 25°C)			
Conductivity (at 25°C)	10	uS/cm	< 10
Nitrate & Nitrite (as N)			
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05

Client Sample ID			FIELD B
Sample Matrix			Water
Eurofins Sample No.			B20-De34090
Date Sampled			Dec 15, 2020
Test/Reference	LOR	Unit	
Nitrate (as N)	0.02	mg/L	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02
Phosphate total (as P)	0.01	mg/L	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	0.01
Salinity (determined from EC)*	20	mg/L	< 20
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	2.4
Turbidity	1	NTU	< 1
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005
Hardness Set			
Calcium	0.5	mg/L	< 0.5
Hardness mg equivalent CaCO ₃ /L	5	mg/L	< 5
Magnesium	0.5	mg/L	< 0.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Dec 19, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Dec 19, 2020	2 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Melbourne	Dec 19, 2020	28 Days
- Method: LTM-INO-4030 Conductivity			
Salinity (determined from EC)*	Melbourne	Jan 03, 2021	0 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Melbourne	Dec 19, 2020	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Turbidity	Melbourne	Dec 19, 2020	2 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Metals M8 filtered	Brisbane	Dec 16, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Hardness Set			
Calcium	Melbourne	Dec 19, 2020	180 Days
- Method:			
Hardness mg equivalent CaCO ₃ /L	Melbourne	Dec 19, 2020	28 Days
- Method:			
Magnesium	Melbourne	Dec 19, 2020	180 Days
- Method:			
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N)	Melbourne	Dec 19, 2020	28 Days
- Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Dec 19, 2020	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrate (as N)	Melbourne	Dec 19, 2020	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrite (as N)	Melbourne	Dec 19, 2020	2 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Phosphate total (as P)	Melbourne	Dec 19, 2020	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Dec 19, 2020	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Dec 19, 2020	7 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

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Site # 1254 & 14271

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ

Order No.:
Report #: 764208
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Dec 16, 2020 2:00 PM
Due: Dec 23, 2020
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Ryan Gilbert

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794												X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2GSW1.2	Dec 14, 2020	5:30PM	Water	B20-De34082	X	X	X	X	X	X	X	X	X
2	B2GSW1.2R	Dec 14, 2020	5:00PM	Water	B20-De34083	X	X	X	X	X	X	X	X	X
3	B2GSW1.3	Dec 15, 2020	9:00AM	Water	B20-De34084	X	X	X	X	X	X	X	X	X
4	B2GSW1.6	Dec 15, 2020	8:10AM	Water	B20-De34085	X	X	X	X	X	X	X	X	X
5	B2GSW1.7	Dec 14, 2020	2:20PM	Water	B20-De34086	X	X	X	X	X	X	X	X	X
6	B2GSW1.11	Dec 15, 2020	12:30PM	Water	B20-De34087	X	X	X	X	X	X	X	X	X
7	B2GSW1.42	Dec 16, 2020	7:45AM	Water	B20-De34088	X	X	X	X	X	X	X	X	X
8	DUP	Dec 14, 2020		Water	B20-De34089	X	X	X	X	X	X	X	X	X
9	FIELD B	Dec 15, 2020	9:00AM	Water	B20-De34090	X	X	X	X	X	X	X	X	X
Test Counts						9	9	9	9	9	9	9	9	9

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Hardness Set							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	105			70-130	Pass	
Acenaphthylene	%	104			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	96			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	%	86			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g,h,i)perylene			%	110			70-130	Pass	
Benzo(k)fluoranthene			%	114			70-130	Pass	
Chrysene			%	122			70-130	Pass	
Dibenz(a,h)anthracene			%	84			70-130	Pass	
Fluoranthene			%	87			70-130	Pass	
Fluorene			%	117			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	97			70-130	Pass	
Naphthalene			%	96			70-130	Pass	
Phenanthrene			%	109			70-130	Pass	
Pyrene			%	77			70-130	Pass	
LCS - % Recovery									
Ammonia (as N)			%	113			70-130	Pass	
Conductivity (at 25°C)			%	99			70-130	Pass	
Nitrate & Nitrite (as N)			%	102			70-130	Pass	
Nitrate (as N)			%	102			70-130	Pass	
Nitrite (as N)			%	100			70-130	Pass	
Phosphate total (as P)			%	112			70-130	Pass	
Phosphorus reactive (as P)			%	117			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	101			70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	100			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic (filtered)			%	91			80-120	Pass	
Cadmium (filtered)			%	86			80-120	Pass	
Chromium (filtered)			%	86			80-120	Pass	
Copper (filtered)			%	84			80-120	Pass	
Lead (filtered)			%	87			80-120	Pass	
Mercury (filtered)			%	87			80-120	Pass	
Nickel (filtered)			%	81			80-120	Pass	
Zinc (filtered)			%	82			80-120	Pass	
LCS - % Recovery									
Hardness Set									
Calcium			%	113			80-120	Pass	
Magnesium			%	106			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M20-De38256	NCP	%	95			70-130	Pass	
Acenaphthylene	M20-De38256	NCP	%	81			70-130	Pass	
Anthracene	M20-De38256	NCP	%	113			70-130	Pass	
Benz(a)anthracene	M20-De38256	NCP	%	117			70-130	Pass	
Benzo(a)pyrene	M20-De38256	NCP	%	105			70-130	Pass	
Benzo(b&j)fluoranthene	M20-De38256	NCP	%	108			70-130	Pass	
Benzo(g,h,i)perylene	S20-De27675	NCP	%	114			70-130	Pass	
Benzo(k)fluoranthene	S20-De27675	NCP	%	116			70-130	Pass	
Chrysene	S20-De27675	NCP	%	122			70-130	Pass	
Dibenz(a,h)anthracene	M20-De38256	NCP	%	101			70-130	Pass	
Fluoranthene	M20-De38256	NCP	%	125			70-130	Pass	
Fluorene	M20-De38256	NCP	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M20-De38256	NCP	%	110			70-130	Pass	
Naphthalene	S20-De27675	NCP	%	89			70-130	Pass	
Phenanthrene	M20-De38256	NCP	%	122			70-130	Pass	
Pyrene	M20-De38256	NCP	%	130			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
				Result 1					
Phosphate total (as P)	P20-De39401	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	B20-De34082	CP	%	106			75-125	Pass	
Cadmium (filtered)	B20-De34082	CP	%	106			75-125	Pass	
Chromium (filtered)	B20-De34082	CP	%	98			75-125	Pass	
Copper (filtered)	B20-De34082	CP	%	96			75-125	Pass	
Lead (filtered)	B20-De34082	CP	%	96			75-125	Pass	
Mercury (filtered)	B20-De34082	CP	%	104			75-125	Pass	
Nickel (filtered)	B20-De34082	CP	%	95			75-125	Pass	
Zinc (filtered)	B20-De34082	CP	%	101			75-125	Pass	
Spike - % Recovery									
Hardness Set				Result 1					
Calcium	S20-De35759	NCP	%	113			75-125	Pass	
Magnesium	S20-De35759	NCP	%	110			75-125	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B20-De34086	CP	%	127			70-130	Pass	
Nitrate & Nitrite (as N)	B20-De34086	CP	%	99			70-130	Pass	
Nitrate (as N)	B20-De34086	CP	%	99			70-130	Pass	
Nitrite (as N)	B20-De34086	CP	%	99			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Suspended Solids Dried at 103–105°C	B20-De34089	CP	%	99			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B20-De34356	NCP	ug/L	< 5	< 5	<1	30%	Pass	
Conductivity (at 25°C)	B20-De38667	NCP	uS/cm	25000	19000	27	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B20-De32403	NCP	mg/L	53	55	5.1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	B20-De34186	NCP	mg/L	0.001	0.001	2.0	30%	Pass	
Cadmium (filtered)	B20-De34251	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	B20-De34251	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B20-De34186	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	B20-De34186	NCP	mg/L	0.008	0.008	2.0	30%	Pass	
Zinc (filtered)	B20-De34186	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Hardness Set				Result 1	Result 2	RPD			
Calcium	S20-De35759	NCP	mg/L	15	21	35	30%	Fail	Q15
Magnesium	S20-De35759	NCP	mg/L	9.5	12	22	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B20-De34086	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Nitrate & Nitrite (as N)	B20-De34086	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	B20-De34086	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Nitrite (as N)	B20-De34086	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B20-De34087	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Turbidity	B20-De34088	CP	NTU	120	110	6.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Phosphate total (as P)	B20-De34089	CP	mg/L	0.04	0.04	<1	30%	Pass
Total Suspended Solids Dried at 103–105°C	B20-De34089	CP	mg/L	26	31	20	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B20-De34090	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Nitrate & Nitrite (as N)	B20-De34090	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	B20-De34090	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	B20-De34090	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Peter Brand	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)



Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **James Bone**

Report **769214-W**
Project name **B2G SWQ**
Received Date **Jan 22, 2021**

Client Sample ID			B2GSW1.27	B2GSW1.30	B2GSW1.33	B2GSW1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25804	B21-Ja25805	B21-Ja25806	B21-Ja25807
Date Sampled			Jan 20, 2021	Jan 20, 2021	Jan 21, 2021	Jan 21, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	51	57	53	97
p-Terphenyl-d14 (surr.)	1	%	88	79	90	96
Ammonia (as N)	0.01	mg/L	< 0.01	0.01	0.16	0.03
Chlorophyll a	5	ug/L	5.9	12	16	< 5
Conductivity (at 25°C)	10	uS/cm	220	220	360	930
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	0.06
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.04
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.02
Phosphate total (as P)	0.01	mg/L	0.35	0.33	0.71	0.20
Phosphorus reactive (as P)	0.01	mg/L	0.16	0.14	0.44	0.03
Salinity (determined from EC)*	20	mg/L	110	110	170	460
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.9	1.6	2.5	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.9	1.6	2.5	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	20	22	25	25
Turbidity	1	NTU	23	25	7.7	20

Client Sample ID			B2GSW1.27	B2GSW1.30	B2GSW1.33	B2GSW1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25804	B21-Ja25805	B21-Ja25806	B21-Ja25807
Date Sampled			Jan 20, 2021	Jan 20, 2021	Jan 21, 2021	Jan 21, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.003	0.002	0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	0.004	0.007	0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.009	< 0.005
Hardness Set						
Calcium	0.5	mg/L	16	15	24	38
Hardness mg equivalent CaCO ₃ /L	5	mg/L	76	70	120	280
Magnesium	0.5	mg/L	8.5	7.9	14	45

Client Sample ID			B2GSW1.40	B2GSW1.42	DUPLICATE 1	DUPLICATE 2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25808	B21-Ja25809	B21-Ja25810	B21-Ja25811
Date Sampled			Jan 21, 2021	Jan 21, 2021	Jan 19, 2021	Jan 21, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	62	71	69	71
p-Terphenyl-d14 (surr.)	1	%	72	86	79	69
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.08	0.02
Chlorophyll a	5	ug/L	< 5	< 5	6.4	6.4
Conductivity (at 25°C)	10	uS/cm	660	880	310	390
Nitrate & Nitrite (as N)	0.05	mg/L	0.23	0.25	0.07	< 0.05
Nitrate (as N)	0.02	mg/L	0.21	0.24	0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	0.05	< 0.02
Phosphate total (as P)	0.01	mg/L	0.22	0.19	0.18	0.72
Phosphorus reactive (as P)	0.01	mg/L	0.04	0.02	0.02	0.42
Salinity (determined from EC)*	20	mg/L	320	430	150	190

Client Sample ID			B2GSW1.40	B2GSW1.42	DUPLICATE 1	DUPLICATE 2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25808	B21-Ja25809	B21-Ja25810	B21-Ja25811
Date Sampled			Jan 21, 2021	Jan 21, 2021	Jan 19, 2021	Jan 21, 2021
Test/Reference	LOR	Unit				
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.5	0.7	1.6	3.4
Total Nitrogen (as N)*	0.2	mg/L	0.73	0.95	1.67	3.4
Total Suspended Solids Dried at 103–105°C	1	mg/L	13	12	29	18
Turbidity	1	NTU	8.4	4.5	24	7.7
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.003	0.001	0.007
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	0.009
Hardness Set						
Calcium	0.5	mg/L	33	47	35	32
Hardness mg equivalent CaCO ₃ /L	5	mg/L	210	300	210	150
Magnesium	0.5	mg/L	31	44	30	17

Client Sample ID			FIELD BLANK 1	B2GSW1.2	B2GSW1.2R	B2GSW1.3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25812	B21-Ja25813	B21-Ja25814	B21-Ja25815
Date Sampled			Jan 20, 2021	Jan 19, 2021	Jan 19, 2021	Jan 20, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	62	96	88	59
p-Terphenyl-d14 (surr.)	1	%	88	59	61	63

Client Sample ID			FIELD BLANK 1	B2GSW1.2	B2GSW1.2R	B2GSW1.3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25812	B21-Ja25813	B21-Ja25814	B21-Ja25815
Date Sampled			Jan 20, 2021	Jan 19, 2021	Jan 19, 2021	Jan 20, 2021
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.02	< 0.01	0.01	0.08
Chlorophyll a	5	ug/L	< 5	< 5	< 5	5.3
Conductivity (at 25°C)	10	uS/cm	< 10	320	310	200
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	0.09
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.05
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.04
Phosphate total (as P)	0.01	mg/L	< 0.01	0.15	0.16	0.19
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	0.03	0.03	0.03
Salinity (determined from EC)*	20	mg/L	< 20	150	150	97
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.3	1.4	0.9	1.9
Total Nitrogen (as N)*	0.2	mg/L	0.3	1.4	0.9	1.99
Total Suspended Solids Dried at 103–105°C	1	mg/L	< 1	22	4.9	39
Turbidity	1	NTU	< 1	17	23	87
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.004	0.004	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.004	0.004	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	< 5	24	25	12
Hardness mg equivalent CaCO ₃ /L	5	mg/L	9.5	130	130	52
Magnesium	0.5	mg/L	< 5	17	18	5.3

Client Sample ID			B2GSW1.6	B2GSW1.7	B2GSW1.11	B2GSW1.16
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25816	B21-Ja25817	B21-Ja25818	B21-Ja25819
Date Sampled			Jan 20, 2021	Jan 19, 2021	Jan 20, 2021	Jan 20, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			B2GSW1.6	B2GSW1.7	B2GSW1.11	B2GSW1.16
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ja25816	B21-Ja25817	B21-Ja25818	B21-Ja25819
Date Sampled			Jan 20, 2021	Jan 19, 2021	Jan 20, 2021	Jan 20, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	79	86	56	71
p-Terphenyl-d14 (surr.)	1	%	65	86	79	86
Ammonia (as N)	0.01	mg/L	0.06	0.08	0.07	0.13
Chlorophyll a	5	ug/L	5.3	5.3	7.5	22
Conductivity (at 25°C)	10	uS/cm	280	340	200	180
Nitrate & Nitrite (as N)	0.05	mg/L	0.10	0.07	< 0.05	0.12
Nitrate (as N)	0.02	mg/L	0.06	< 0.02	< 0.02	0.09
Nitrite (as N)	0.02	mg/L	0.04	0.05	0.03	0.03
Phosphate total (as P)	0.01	mg/L	0.18	0.18	0.14	0.25
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.03	0.02	0.07
Salinity (determined from EC)*	20	mg/L	130	160	95	90
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.6	0.7	0.6	0.7
Total Nitrogen (as N)*	0.2	mg/L	1.7	0.77	0.6	0.82
Total Suspended Solids Dried at 103–105°C	1	mg/L	16	24	30	29
Turbidity	1	NTU	44	16	54	110
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.002	0.002	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.001	0.003	0.003
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	17	20	13	19
Hardness mg equivalent CaCO ₃ /L	5	mg/L	72	88	55	68
Magnesium	0.5	mg/L	7.3	9.2	5.4	4.8

Client Sample ID			B2GSW1.18	B2GSW1.23	B2GSW1.24
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B21-Ja25820	B21-Ja25821	B21-Ja25822
Date Sampled			Jan 19, 2021	Jan 20, 2021	Jan 20, 2021
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001

Client Sample ID			B2GSW1.18	B2GSW1.23	B2GSW1.24
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B21-Ja25820	B21-Ja25821	B21-Ja25822
Date Sampled			Jan 19, 2021	Jan 20, 2021	Jan 20, 2021
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	69	71	79
p-Terphenyl-d14 (surr.)	1	%	79	58	55
Ammonia (as N)	0.01	mg/L	0.05	0.12	0.20
Chlorophyll a	5	ug/L	< 5	< 5	8.5
Conductivity (at 25°C)	10	uS/cm	180	190	200
Nitrate & Nitrite (as N)	0.05	mg/L	0.30	0.08	0.16
Nitrate (as N)	0.02	mg/L	0.30	0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	0.06	0.14
Phosphate total (as P)	0.01	mg/L	0.23	0.25	0.29
Phosphorus reactive (as P)	0.01	mg/L	0.08	0.06	0.06
Salinity (determined from EC)*	20	mg/L	89	92	97
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.7	1.0	1.2
Total Nitrogen (as N)*	0.2	mg/L	1	1.08	1.36
Total Suspended Solids Dried at 103–105°C	1	mg/L	130	34	56
Turbidity	1	NTU	400	190	270
Heavy Metals					
Arsenic (filtered)	0.001	mg/L	0.001	0.002	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.003	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.004	0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005
Hardness Set					
Calcium	0.5	mg/L	17	12	8.3
Hardness mg equivalent CaCO3/L	5	mg/L	65	50	42
Magnesium	0.5	mg/L	5.2	5.1	5.2

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Jan 25, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Jan 25, 2021	2 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Melbourne	Jan 25, 2021	28 Days
- Method: LTM-INO-4030 Conductivity			
Salinity (determined from EC)*	Melbourne	Jan 25, 2021	0 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Melbourne	Jan 25, 2021	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Turbidity	Melbourne	Jan 25, 2021	2 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Metals M8 filtered	Melbourne	Jan 28, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Hardness Set			
Calcium	Melbourne	Jan 25, 2021	180 Days
- Method:			
Hardness mg equivalent CaCO ₃ /L	Melbourne	Jan 25, 2021	28 Days
- Method:			
Magnesium	Melbourne	Jan 25, 2021	180 Days
- Method:			
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N)	Melbourne	Jan 25, 2021	28 Days
- Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Jan 25, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrate (as N)	Melbourne	Jan 25, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrite (as N)	Melbourne	Jan 25, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Phosphate total (as P)	Melbourne	Jan 25, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Jan 25, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jan 25, 2021	7 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

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Project Name: B2G SWQ

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Received: Jan 22, 2021 1:20 PM
Due: Feb 1, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Ryan Gilbert

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2GSW1.27	Jan 20, 2021	4:15PM	Water	B21-Ja25804	X	X	X	X	X	X	X	X	X
2	B2GSW1.30	Jan 20, 2021	3:30PM	Water	B21-Ja25805	X	X	X	X	X	X	X	X	X
3	B2GSW1.33	Jan 21, 2021	7:00AM	Water	B21-Ja25806	X	X	X	X	X	X	X	X	X
4	B2GSW1.39	Jan 21, 2021	8:30AM	Water	B21-Ja25807	X	X	X	X	X	X	X	X	X
5	B2GSW1.40	Jan 21, 2021	9:00AM	Water	B21-Ja25808	X	X	X	X	X	X	X	X	X
6	B2GSW1.42	Jan 21, 2021	10:15AM	Water	B21-Ja25809	X	X	X	X	X	X	X	X	X
7	DUPLICATE 1	Jan 19, 2021		Water	B21-Ja25810	X	X	X	X	X	X	X	X	X
8	DUPLICATE 2	Jan 21, 2021		Water	B21-Ja25811	X	X	X	X	X	X	X	X	X
9	FIELD BLANK 1	Jan 20, 2021		Water	B21-Ja25812	X	X	X	X	X	X	X	X	X

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Project Name: B2G SWQ

Order No.:
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Received: Jan 22, 2021 1:20 PM
Due: Feb 1, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Ryan Gilbert

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Poly cyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
10	B2GSW1.2	Jan 19, 2021	4:45PM	Water	B21-Ja25813	X	X	X	X	X	X	X	X	X
11	B2GSW1.2R	Jan 19, 2021	5:30PM	Water	B21-Ja25814	X	X	X	X	X	X	X	X	X
12	B2GSW1.3	Jan 20, 2021	9:00AM	Water	B21-Ja25815	X	X	X	X	X	X	X	X	X
13	B2GSW1.6	Jan 20, 2021	7:30AM	Water	B21-Ja25816	X	X	X	X	X	X	X	X	X
14	B2GSW1.7	Jan 19, 2021	2:00PM	Water	B21-Ja25817	X	X	X	X	X	X	X	X	X
15	B2GSW1.11	Jan 20, 2021	10:30AM	Water	B21-Ja25818	X	X	X	X	X	X	X	X	X
16	B2GSW1.16	Jan 20, 2021	11:45AM	Water	B21-Ja25819	X	X	X	X	X	X	X	X	X
17	B2GSW1.18	Jan 19, 2021	11:30AM	Water	B21-Ja25820	X	X	X	X	X	X	X	X	X
18	B2GSW1.23	Jan 20, 2021	1:30PM	Water	B21-Ja25821	X	X	X	X	X	X	X	X	X
19	B2GSW1.24	Jan 20, 2021	2:15PM	Water	B21-Ja25822	X	X	X	X	X	X	X	X	X
Test Counts						19	19	19	19	19	19	19	19	19

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Hardness Set							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	109			70-130	Pass	
Acenaphthylene	%	88			70-130	Pass	
Anthracene	%	83			70-130	Pass	
Benz(a)anthracene	%	102			70-130	Pass	
Benzo(a)pyrene	%	98			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g,h,i)perylene	%	98			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene		%	88			70-130	Pass	
Chrysene		%	98			70-130	Pass	
Dibenz(a,h)anthracene		%	89			70-130	Pass	
Fluoranthene		%	117			70-130	Pass	
Fluorene		%	91			70-130	Pass	
Indeno(1,2,3-cd)pyrene		%	89			70-130	Pass	
Naphthalene		%	87			70-130	Pass	
Phenanthrene		%	108			70-130	Pass	
Pyrene		%	115			70-130	Pass	
LCS - % Recovery								
Ammonia (as N)		%	110			70-130	Pass	
Conductivity (at 25°C)		%	104			70-130	Pass	
Nitrate & Nitrite (as N)		%	95			70-130	Pass	
Nitrate (as N)		%	95			70-130	Pass	
Nitrite (as N)		%	106			70-130	Pass	
Phosphate total (as P)		%	106			70-130	Pass	
Phosphorus reactive (as P)		%	105			70-130	Pass	
Total Kjeldahl Nitrogen (as N)		%	115			70-130	Pass	
Total Suspended Solids Dried at 103–105°C		%	109			70-130	Pass	
LCS - % Recovery								
Hardness Set								
Calcium		%	114			80-120	Pass	
Magnesium		%	104			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-Ja27717	NCP	%	119		70-130	Pass	
Nitrate & Nitrite (as N)	B21-Ja27717	NCP	%	97		70-130	Pass	
Nitrate (as N)	B21-Ja27717	NCP	%	97		70-130	Pass	
Nitrite (as N)	B21-Ja27717	NCP	%	108		70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B21-Ja27980	NCP	%	109		70-130	Pass	
Spike - % Recovery								
				Result 1				
Total Suspended Solids Dried at 103–105°C	B21-Ja25810	CP	%	108		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic (filtered)	B21-Ja25812	CP	%	106		75-125	Pass	
Cadmium (filtered)	B21-Ja25812	CP	%	97		75-125	Pass	
Chromium (filtered)	B21-Ja25812	CP	%	102		75-125	Pass	
Copper (filtered)	B21-Ja25812	CP	%	99		75-125	Pass	
Lead (filtered)	B21-Ja25812	CP	%	105		75-125	Pass	
Mercury (filtered)	B21-Ja25812	CP	%	99		75-125	Pass	
Nickel (filtered)	B21-Ja25812	CP	%	101		75-125	Pass	
Zinc (filtered)	B21-Ja25812	CP	%	103		75-125	Pass	
Spike - % Recovery								
Hardness Set				Result 1				
Calcium	B21-Ja25812	CP	%	105		75-125	Pass	
Magnesium	B21-Ja25812	CP	%	92		75-125	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	B21-Ja25817	CP	%	93		70-130	Pass	
Acenaphthylene	B21-Ja25817	CP	%	111		70-130	Pass	
Anthracene	B21-Ja25817	CP	%	73		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	B21-Ja25817	CP	%	100			70-130	Pass	
Benzo(a)pyrene	B21-Ja25817	CP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	B21-Ja25817	CP	%	103			70-130	Pass	
Benzo(g,h,i)perylene	B21-Ja25817	CP	%	71			70-130	Pass	
Benzo(k)fluoranthene	B21-Ja25817	CP	%	99			70-130	Pass	
Chrysene	B21-Ja25817	CP	%	92			70-130	Pass	
Dibenz(a,h)anthracene	B21-Ja25817	CP	%	106			70-130	Pass	
Fluoranthene	B21-Ja25817	CP	%	93			70-130	Pass	
Fluorene	B21-Ja25817	CP	%	105			70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-Ja25817	CP	%	114			70-130	Pass	
Naphthalene	B21-Ja25817	CP	%	80			70-130	Pass	
Phenanthrene	B21-Ja25817	CP	%	82			70-130	Pass	
Pyrene	B21-Ja25817	CP	%	92			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	B21-Ja25817	CP	%	89			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B21-Ja27717	NCP	mg/L	1.3	1.3	<1	30%	Pass	
Conductivity (at 25°C)	B21-Ja25804	CP	uS/cm	220	230	3.0	30%	Pass	
Nitrate & Nitrite (as N)	B21-Ja27717	NCP	mg/L	0.62	0.62	<1	30%	Pass	
Nitrate (as N)	B21-Ja27717	NCP	mg/L	0.23	0.22	4.0	30%	Pass	
Nitrite (as N)	B21-Ja27717	NCP	mg/L	0.39	0.40	2.0	30%	Pass	
Turbidity	B21-Ja25804	CP	NTU	23	24	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B21-Ja25805	CP	ug/L	12	12	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	B21-Ja25806	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphate total (as P)	B21-Ja25807	CP	mg/L	0.20	0.19	6.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	B21-Ja25810	CP	mg/L	29	32	13	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-Ja25812	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	B21-Ja25812	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	B21-Ja25812	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-Ja25812	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	B21-Ja25812	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	B21-Ja25812	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-Ja25812	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	B21-Ja25812	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Hardness Set				Result 1	Result 2	RPD		
Calcium	B21-Ja25812	CP	mg/L	< 5	< 5	<1	30%	Pass
Magnesium	B21-Ja25812	CP	mg/L	< 5	< 5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-Ja25814	CP	uS/cm	310	350	13	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chlorophyll a	B21-Ja25815	CP	ug/L	5.3	5.3	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-Ja25816	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Kjeldahl Nitrogen (as N)	B21-Ja33506	NCP	mg/L	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-Ja25819	CP	uS/cm	180	190	3.0	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-Ja25819	CP	mg/L	29	38	27	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Ryan Gilbert	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Aurecon Australia (BRIS) Pty Ltd
Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006



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Accreditation Number 1261
Site Number 20794

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The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: **James Bone**

Report **776549-W**
Project name **B2G-SWQ**
Received Date **Feb 25, 2021**

Client Sample ID			B2G-SW 1.03	B2G-SW 1.6	B2G-SW 1.7	B2G-SW 1.11
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51297	B21-Fe51298	B21-Fe51299	B21-Fe51300
Date Sampled			Feb 24, 2021	Feb 24, 2021	Feb 24, 2021	Feb 24, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	71	93	77	83
p-Terphenyl-d14 (surr.)	1	%	84	57	92	94
Ammonia (as N)	0.01	mg/L	0.25	0.14	0.08	0.03
Chlorophyll a	5	ug/L	8.0	9.1	6.9	6.9
Conductivity (at 25°C)	10	uS/cm	210	420	360	230
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.06	0.05	0.04	0.05
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.02	< 0.01	< 0.01
Salinity (expressed as TDS)*	10	mg/L	160	120	230	160
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.0	1.0	0.7	1.2
Total Nitrogen (as N)*	0.2	mg/L	1	1	0.7	1.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	9.9	14	18	13
Turbidity	1	NTU	7.9	17	22	6.3

Client Sample ID			B2G-SW 1.03	B2G-SW 1.6	B2G-SW 1.7	B2G-SW 1.11
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51297	B21-Fe51298	B21-Fe51299	B21-Fe51300
Date Sampled			Feb 24, 2021	Feb 24, 2021	Feb 24, 2021	Feb 24, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.002	0.002	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	6.2	19	19	14
Hardness mg equivalent CaCO ₃ /L	5	mg/L	31	92	91	64
Magnesium	0.5	mg/L	< 5	11	11	6.8

Client Sample ID			B2G-SW 1.16	B2G-SW 1.18	B2G-SW 1.23	B2G-SW 1.24
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51301	B21-Fe51302	B21-Fe51303	B21-Fe51304
Date Sampled			Feb 24, 2021	Feb 23, 2021	Feb 23, 2021	Feb 23, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	78	73	138	135
p-Terphenyl-d14 (surr.)	1	%	78	83	84	83
Ammonia (as N)	0.01	mg/L	0.09	0.06	0.08	0.13
Chlorophyll a	5	ug/L	7.5	6.4	20	5.3
Conductivity (at 25°C)	10	uS/cm	220	200	250	230
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.07	0.05	0.07	0.13
Phosphorus reactive (as P)	0.01	mg/L	0.04	0.06	0.01	0.03
Salinity (expressed as TDS)*	10	mg/L	150	190	160	180

Client Sample ID			B2G-SW 1.16	B2G-SW 1.18	B2G-SW 1.23	B2G-SW 1.24
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51301	B21-Fe51302	B21-Fe51303	B21-Fe51304
Date Sampled			Feb 24, 2021	Feb 23, 2021	Feb 23, 2021	Feb 23, 2021
Test/Reference	LOR	Unit				
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.6	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.6	< 0.2	< 0.2	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	15	14	56	41
Turbidity	1	NTU	23	48	87	110
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	0.001	0.002	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.002	0.003	0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.008	< 0.005
Hardness Set						
Calcium	0.5	mg/L	16	10	18	12
Hardness mg equivalent CaCO ₃ /L	5	mg/L	73	41	72	58
Magnesium	0.5	mg/L	< 5	< 5	6.2	6.5

Client Sample ID			B2G-SW 1.27	B2G-SW 1.30	B2G-SW 1.33	B2G-SW 1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51305	B21-Fe51306	B21-Fe51307	B21-Fe51308
Date Sampled			Feb 24, 2021	Feb 23, 2021	Feb 25, 2021	Feb 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	149	93	79	72
p-Terphenyl-d14 (surr.)	1	%	100	110	99	98
Ammonia (as N)	0.01	mg/L	0.28	0.36	0.09	0.03
Chlorophyll a	5	ug/L	14	8.5	11	5.3
Conductivity (at 25°C)	10	uS/cm	330	270	430	1400
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			B2G-SW 1.27	B2G-SW 1.30	B2G-SW 1.33	B2G-SW 1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51305	B21-Fe51306	B21-Fe51307	B21-Fe51308
Date Sampled			Feb 24, 2021	Feb 23, 2021	Feb 25, 2021	Feb 25, 2021
Test/Reference	LOR	Unit				
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.10	0.32	0.30	0.04
Phosphorus reactive (as P)	0.01	mg/L	0.05	0.20	0.11	< 0.01
Salinity (expressed as TDS)*	10	mg/L	190	180	300	780
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.4	0.8	2.1	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.4	0.8	2.1	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	61	84	11	9.9
Turbidity	1	NTU	75	87	9.2	11
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	< 0.001	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.002	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	0.005	0.006	0.005
Zinc (filtered)	0.005	mg/L	0.030	0.015	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	23	23	36	68
Hardness mg equivalent CaCO ₃ /L	5	mg/L	110	110	180	500
Magnesium	0.5	mg/L	12	12	21	79

Client Sample ID			B2G-SW 1.42	DUPLICATE 1	DUPLICATE 2	FIELD BLANK 1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51309	B21-Fe51310	B21-Fe51311	B21-Fe51312
Date Sampled			Feb 25, 2021	Feb 23, 2021	Feb 25, 2021	Feb 24, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	106	88	76	118
p-Terphenyl-d14 (surr.)	1	%	128	92	84	146

Client Sample ID			B2G-SW 1.42	DUPLICATE 1	DUPLICATE 2	FIELD BLANK 1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Fe51309	B21-Fe51310	B21-Fe51311	B21-Fe51312
Date Sampled			Feb 25, 2021	Feb 23, 2021	Feb 25, 2021	Feb 24, 2021
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.04	0.11	0.09	< 0.01
Chlorophyll a	5	ug/L	< 5	5.3	9.6	< 5
Conductivity (at 25°C)	10	uS/cm	1400	220	470	< 10
Nitrate & Nitrite (as N)	0.05	mg/L	0.42	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.41	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03	0.13	0.27	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	0.01	0.03	0.11	< 0.01
Salinity (expressed as TDS)*	10	mg/L	730	260	310	< 10
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	0.5	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.42	< 0.2	0.5	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	8.0	56	11	3.6
Turbidity	1	NTU	5.4	110	6.4	< 1
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.002	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.005	0.006	< 0.001
Zinc (filtered)	0.005	mg/L	0.057	< 0.005	0.024	< 0.005
Hardness Set						
Calcium	0.5	mg/L	61	10.0	27	< 0.5
Hardness mg equivalent CaCO3/L	5	mg/L	510	62	140	< 5
Magnesium	0.5	mg/L	88	9.1	17	< 0.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 01, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Mar 01, 2021	2 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Melbourne	Mar 01, 2021	28 Days
- Method: LTM-INO-4030 Conductivity			
Salinity (expressed as TDS)*	Melbourne	Mar 04, 2021	7 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Melbourne	Mar 01, 2021	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Turbidity	Melbourne	Mar 02, 2021	2 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Metals M8 filtered	Brisbane	Mar 02, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Hardness Set			
Calcium	Melbourne	Mar 01, 2021	180 Days
- Method:			
Hardness mg equivalent CaCO ₃ /L	Melbourne	Mar 01, 2021	28 Days
- Method:			
Magnesium	Melbourne	Mar 01, 2021	180 Days
- Method:			
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N)	Melbourne	Mar 01, 2021	28 Days
- Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Mar 01, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrate (as N)	Melbourne	Mar 01, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrite (as N)	Melbourne	Mar 01, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Phosphate total (as P)	Melbourne	Mar 01, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Mar 01, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Mar 01, 2021	7 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G-SWQ

Order No.:
Report #: 776549
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Feb 25, 2021 2:30 PM
Due: Mar 4, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Ryan Gilbert

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794												X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G-SW 1.03	Feb 24, 2021		Water	B21-Fe51297	X	X	X	X	X	X	X	X	X
2	B2G-SW 1.6	Feb 24, 2021		Water	B21-Fe51298	X	X	X	X	X	X	X	X	X
3	B2G-SW 1.7	Feb 24, 2021		Water	B21-Fe51299	X	X	X	X	X	X	X	X	X
4	B2G-SW 1.11	Feb 24, 2021		Water	B21-Fe51300	X	X	X	X	X	X	X	X	X
5	B2G-SW 1.16	Feb 24, 2021		Water	B21-Fe51301	X	X	X	X	X	X	X	X	X
6	B2G-SW 1.18	Feb 23, 2021		Water	B21-Fe51302	X	X	X	X	X	X	X	X	X
7	B2G-SW 1.23	Feb 23, 2021		Water	B21-Fe51303	X	X	X	X	X	X	X	X	X
8	B2G-SW 1.24	Feb 23, 2021		Water	B21-Fe51304	X	X	X	X	X	X	X	X	X
9	B2G-SW 1.27	Feb 24, 2021		Water	B21-Fe51305	X	X	X	X	X	X	X	X	X
10	B2G-SW 1.30	Feb 23, 2021		Water	B21-Fe51306	X	X	X	X	X	X	X	X	X

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NATA # 1261
Site # 1254 & 14271

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Lane Cove West NSW 2066
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NATA # 1261 Site # 18217

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NATA # 1261
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Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
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Order No.:
Report #: 776549
Phone: 07 3173 8000
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Received: Feb 25, 2021 2:30 PM
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Contact Name: James Bone

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Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Poly cyclic Aromatic Hydrocarbons	Metals M8	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794												X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
11	B2G-SW 1.33	Feb 25, 2021		Water	B21-Fe51307	X	X	X	X	X	X	X	X	X
12	B2G-SW 1.39	Feb 25, 2021		Water	B21-Fe51308	X	X	X	X	X	X	X	X	X
13	B2G-SW 1.42	Feb 25, 2021		Water	B21-Fe51309	X	X	X	X	X	X	X	X	X
14	DUPLICATE 1	Feb 23, 2021		Water	B21-Fe51310	X	X	X	X	X	X	X	X	X
15	DUPLICATE 2	Feb 25, 2021		Water	B21-Fe51311	X	X	X	X	X	X	X	X	X
16	FIELD BLANK 1	Feb 24, 2021		Water	B21-Fe51312	X	X	X	X	X	X	X	X	X
Test Counts						16	16	16	16	16	16	16	16	16

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Hardness Set							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	99			70-130	Pass	
Acenaphthylene	%	83			70-130	Pass	
Anthracene	%	114			70-130	Pass	
Benz(a)anthracene	%	106			70-130	Pass	
Benzo(a)pyrene	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	%	85			70-130	Pass	
Benzo(g,h,i)perylene	%	112			70-130	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene			%	88		70-130	Pass	
Chrysene			%	119		70-130	Pass	
Dibenz(a,h)anthracene			%	86		70-130	Pass	
Fluoranthene			%	101		70-130	Pass	
Fluorene			%	96		70-130	Pass	
Indeno(1,2,3-cd)pyrene			%	105		70-130	Pass	
Naphthalene			%	83		70-130	Pass	
Phenanthrene			%	75		70-130	Pass	
Pyrene			%	78		70-130	Pass	
LCS - % Recovery								
Ammonia (as N)			%	103		70-130	Pass	
Conductivity (at 25°C)			%	91		70-130	Pass	
Nitrate & Nitrite (as N)			%	91		70-130	Pass	
Nitrate (as N)			%	90		70-130	Pass	
Nitrite (as N)			%	103		70-130	Pass	
Phosphate total (as P)			%	114		70-130	Pass	
Phosphorus reactive (as P)			%	99		70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	106		70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	97		70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic (filtered)			%	80		80-120	Pass	
Cadmium (filtered)			%	84		80-120	Pass	
Chromium (filtered)			%	89		80-120	Pass	
Copper (filtered)			%	89		80-120	Pass	
Lead (filtered)			%	91		80-120	Pass	
Mercury (filtered)			%	91		80-120	Pass	
Nickel (filtered)			%	86		80-120	Pass	
Zinc (filtered)			%	85		80-120	Pass	
LCS - % Recovery								
Hardness Set								
Calcium			%	110		80-120	Pass	
Magnesium			%	100		80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	B21-Fe51297	CP	%	88		70-130	Pass	
Acenaphthylene	B21-Fe51297	CP	%	100		70-130	Pass	
Anthracene	B21-Fe51297	CP	%	71		70-130	Pass	
Benz(a)anthracene	B21-Fe51297	CP	%	75		70-130	Pass	
Benzo(a)pyrene	B21-Fe51297	CP	%	79		70-130	Pass	
Benzo(b&i)fluoranthene	B21-Fe51297	CP	%	91		70-130	Pass	
Benzo(g,h,i)perylene	B21-Fe51297	CP	%	102		70-130	Pass	
Benzo(k)fluoranthene	B21-Fe51297	CP	%	82		70-130	Pass	
Chrysene	B21-Fe51297	CP	%	80		70-130	Pass	
Dibenz(a,h)anthracene	B21-Fe51297	CP	%	103		70-130	Pass	
Fluoranthene	B21-Fe51297	CP	%	104		70-130	Pass	
Fluorene	B21-Fe51297	CP	%	87		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-Fe51297	CP	%	78		70-130	Pass	
Naphthalene	B21-Fe51297	CP	%	73		70-130	Pass	
Phenanthrene	B21-Fe51297	CP	%	81		70-130	Pass	
Pyrene	B21-Fe51297	CP	%	90		70-130	Pass	
Spike - % Recovery								

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
				Result 1				
Total Suspended Solids Dried at 103–105°C	M21-Fe51392	NCP	%	86		70-130	Pass	
Spike - % Recovery								
				Result 1				
Heavy Metals								
Arsenic (filtered)	B21-Fe51298	CP	%	85		75-125	Pass	
Cadmium (filtered)	B21-Fe51298	CP	%	88		75-125	Pass	
Chromium (filtered)	B21-Fe51298	CP	%	91		75-125	Pass	
Copper (filtered)	B21-Fe51298	CP	%	90		75-125	Pass	
Lead (filtered)	B21-Fe51298	CP	%	90		75-125	Pass	
Mercury (filtered)	B21-Fe51298	CP	%	92		75-125	Pass	
Nickel (filtered)	B21-Fe51298	CP	%	89		75-125	Pass	
Zinc (filtered)	B21-Fe51298	CP	%	92		75-125	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-Fe51299	CP	%	100		70-130	Pass	
Nitrate & Nitrite (as N)	B21-Fe51299	CP	%	92		70-130	Pass	
Nitrate (as N)	B21-Fe51299	CP	%	92		70-130	Pass	
Nitrite (as N)	B21-Fe51299	CP	%	105		70-130	Pass	
Spike - % Recovery								
				Result 1				
Hardness Set								
Calcium	B21-Fe51301	CP	%	113		75-125	Pass	
Magnesium	B21-Fe51301	CP	%	102		75-125	Pass	
Spike - % Recovery								
				Result 1				
Total Kjeldahl Nitrogen (as N)	B21-Fe51304	CP	%	114		70-130	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-Fe51306	CP	%	100		70-130	Pass	
Nitrate & Nitrite (as N)	B21-Fe51306	CP	%	91		70-130	Pass	
Nitrate (as N)	B21-Fe51306	CP	%	90		70-130	Pass	
Nitrite (as N)	B21-Fe51306	CP	%	104		70-130	Pass	
Spike - % Recovery								
				Result 1				
Phosphate total (as P)	B21-Fe51308	CP	%	117		70-130	Pass	
Spike - % Recovery								
				Result 1				
Heavy Metals								
Arsenic (filtered)	B21-Fe51308	CP	%	91		75-125	Pass	
Cadmium (filtered)	B21-Fe51308	CP	%	91		75-125	Pass	
Chromium (filtered)	B21-Fe51308	CP	%	93		75-125	Pass	
Copper (filtered)	B21-Fe51308	CP	%	87		75-125	Pass	
Lead (filtered)	B21-Fe51308	CP	%	92		75-125	Pass	
Mercury (filtered)	B21-Fe51308	CP	%	106		75-125	Pass	
Nickel (filtered)	B21-Fe51308	CP	%	87		75-125	Pass	
Zinc (filtered)	B21-Fe51308	CP	%	92		75-125	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-Fe51309	CP	%	101		70-130	Pass	
Nitrate & Nitrite (as N)	B21-Fe51309	CP	%	89		70-130	Pass	
Nitrate (as N)	B21-Fe51309	CP	%	89		70-130	Pass	
Nitrite (as N)	B21-Fe51309	CP	%	105		70-130	Pass	
Spike - % Recovery								
				Result 1				
Hardness Set								
Calcium	B21-Fe51311	CP	%	109		75-125	Pass	
Magnesium	B21-Fe51311	CP	%	101		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	B21-Fe51297	CP	mg/L	0.002	0.002	<1	30%	Pass	
Chromium (filtered)	B21-Fe51297	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B21-Fe51297	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	B21-Fe51297	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	B21-Fe51297	CP	mg/L	0.001	0.001	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphate total (as P)	B21-Fe51298	CP	mg/L	0.05	0.05	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B21-Fe51299	CP	mg/L	0.08	0.07	9.0	30%	Pass	
Nitrate & Nitrite (as N)	B21-Fe51299	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	B21-Fe51299	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Nitrite (as N)	B21-Fe51299	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Turbidity	B21-Fe51299	CP	NTU	22	23	6.0	30%	Pass	
Duplicate									
Hardness Set				Result 1	Result 2	RPD			
Calcium	B21-Fe51301	CP	mg/L	16	13	18	30%	Pass	
Magnesium	B21-Fe51301	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Salinity (expressed as TDS)*	B21-Fe51302	CP	mg/L	190	190	<1	30%	Pass	
Turbidity	B21-Fe51302	CP	NTU	48	53	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Kjeldahl Nitrogen (as N)	B21-Fe51303	CP	mg/L	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	B21-Fe51305	CP	uS/cm	330	330	1.0	30%	Pass	
Total Suspended Solids Dried at 103–105°C	B21-Fe51305	CP	mg/L	61	70	14	30%	Pass	
Turbidity	B21-Fe51305	CP	NTU	75	76	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	B21-Fe51306	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Fe51306	CP	mg/L	0.36	0.33	7.0	30%	Pass
Nitrate & Nitrite (as N)	B21-Fe51306	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	B21-Fe51306	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	B21-Fe51306	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Fe51307	CP	mg/L	0.09	0.07	26	30%	Pass
Nitrate & Nitrite (as N)	B21-Fe51307	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	B21-Fe51307	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	B21-Fe51307	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-Fe51307	CP	mg/L	0.002	0.002	2.0	30%	Pass
Chromium (filtered)	B21-Fe51307	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-Fe51307	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	B21-Fe51307	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	B21-Fe51307	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-Fe51307	CP	mg/L	0.006	0.006	1.0	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Chlorophyll a	B21-Fe51308	CP	ug/L	5.3	5.3	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Fe51309	CP	mg/L	0.04	0.04	16	30%	Pass
Nitrate & Nitrite (as N)	B21-Fe51309	CP	mg/L	0.42	0.42	<1	30%	Pass
Nitrate (as N)	B21-Fe51309	CP	mg/L	0.41	0.42	1.0	30%	Pass
Nitrite (as N)	B21-Fe51309	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Hardness Set				Result 1	Result 2	RPD		
Calcium	B21-Fe51311	CP	mg/L	27	31	14	30%	Pass
Magnesium	B21-Fe51311	CP	mg/L	17	21	19	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Ryan Gilbert	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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QLD 4006



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 inspection and proficiency testing scheme providers
 reports.

Attention: **James Bone**

Report **783161-W**
Project name **B2G SWQ**
Received Date **Mar 25, 2021**

Client Sample ID			B2G_SW 1.06 HFE	B2G_SW 1.7 HFE	B2G_SW 1.11 HFE	B2G_SW 1.16 HFE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ma48886	B21-Ma48887	B21-Ma48888	B21-Ma48889
Date Sampled			Mar 24, 2021	Mar 24, 2021	Mar 24, 2021	Mar 24, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	122	78	85	103
p-Terphenyl-d14 (surr.)	1	%	131	92	104	103
Ammonia (as N)	0.01	mg/L	0.03	0.05	0.04	0.05
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	90	73	80	130
Nitrate & Nitrite (as N)	0.05	mg/L	0.18	0.27	0.34	2.0
Nitrate (as N)	0.02	mg/L	0.18	0.27	0.33	2.0
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	R16< 0.5	R16< 0.5	R16< 0.5	R16< 0.5
Phosphorus reactive (as P)	0.01	mg/L	0.07	0.07	0.04	0.20
Salinity (expressed as TDS)*	10	mg/L	200	180	260	420
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.4	0.3	1.0	13
Total Nitrogen (as N)*	0.2	mg/L	2.58	0.57	1.34	15
Total Suspended Solids Dried at 103–105°C	1	mg/L	240	280	160	320
Turbidity	1	NTU	320	390	190	450

Client Sample ID			B2G_SW 1.06 HFE	B2G_SW 1.7 HFE	B2G_SW 1.11 HFE	B2G_SW 1.16 HFE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ma48886	B21-Ma48887	B21-Ma48888	B21-Ma48889
Date Sampled			Mar 24, 2021	Mar 24, 2021	Mar 24, 2021	Mar 24, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	0.002	0.001	0.002	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.003	0.003	0.003
Lead (filtered)	0.001	mg/L	0.002	0.002	0.002	0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	1.9	3.1	4.0	5.7
Hardness mg equivalent CaCO3/L	5	mg/L	12	19	21	30
Magnesium	0.5	mg/L	1.8	2.6	2.8	3.9

Client Sample ID			B2G_SW 1.18 HFE	B2G_SW 1.20R2	B2G_SW 1.23 HFE	B2G_SW 1.24 HFE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ma48890	B21-Ma48891	B21-Ma48892	B21-Ma48893
Date Sampled			Mar 23, 2021	Mar 23, 2021	Mar 23, 2021	Mar 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	97	90	107	50
p-Terphenyl-d14 (surr.)	1	%	115	106	115	55
Ammonia (as N)	0.01	mg/L	0.08	0.15	0.10	0.05
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	120	220	130	120
Nitrate & Nitrite (as N)	0.05	mg/L	1.3	7.8	3.4	0.95
Nitrate (as N)	0.02	mg/L	1.3	7.8	3.4	0.95
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	R16< 0.5	R16< 0.5	R16< 0.5	R16< 0.5
Phosphorus reactive (as P)	0.01	mg/L	0.10	0.25	0.20	0.27

Client Sample ID			B2G_SW 1.18 HFE	B2G_SW 1.20R2	B2G_SW 1.23	B2G_SW 1.24 HFE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ma48890	B21-Ma48891	B21-Ma48892	B21-Ma48893
Date Sampled			Mar 23, 2021	Mar 23, 2021	Mar 23, 2021	Mar 25, 2021
Test/Reference	LOR	Unit				
Salinity (expressed as TDS)*	10	mg/L	160	360	360	300
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	4.6	4.0	1.2	0.6
Total Nitrogen (as N)*	0.2	mg/L	5.9	11.8	4.6	1.55
Total Suspended Solids Dried at 103–105°C	1	mg/L	700	750	360	110
Turbidity	1	NTU	970	910	440	300
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	0.002
Copper (filtered)	0.001	mg/L	0.002	0.003	0.002	0.003
Lead (filtered)	0.001	mg/L	0.001	< 0.001	0.001	0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	6.9	15	6.8	6.2
Hardness mg equivalent CaCO ₃ /L	5	mg/L	37	64	35	32
Magnesium	0.5	mg/L	4.8	6.4	4.5	4.1

Client Sample ID			B2G_SW 1.27	B2G_SW 1.30	B2G_SW 1.32	B2G_SW 1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ma48894	B21-Ma48895	B21-Ma48896	B21-Ma48897
Date Sampled			Mar 23, 2021	Mar 23, 2021	Mar 24, 2021	Mar 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	125	99	73	98
p-Terphenyl-d14 (surr.)	1	%	142	109	73	56

Client Sample ID			B2G_SW 1.27	B2G_SW 1.30	B2G_SW 1.32	B2G_SW 1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ma48894	B21-Ma48895	B21-Ma48896	B21-Ma48897
Date Sampled			Mar 23, 2021	Mar 23, 2021	Mar 24, 2021	Mar 25, 2021
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.05	0.22	0.03	0.05
Chlorophyll a	5	ug/L	< 5	6.4	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	160	220	180	370
Nitrate & Nitrite (as N)	0.05	mg/L	1.1	0.17	0.91	2.0
Nitrate (as N)	0.02	mg/L	1.1	0.17	0.91	2.0
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	R16< 0.5	R16< 0.5	R16< 0.5	R16< 0.5
Phosphorus reactive (as P)	0.01	mg/L	0.34	0.18	0.43	0.31
Salinity (expressed as TDS)*	10	mg/L	300	190	220	230
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	1.0	< 0.2	13
Total Nitrogen (as N)*	0.2	mg/L	1.1	1.17	0.91	15
Total Suspended Solids Dried at 103–105°C	1	mg/L	330	86	150	96
Turbidity	1	NTU	670	100	330	150
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.001	0.002	0.004
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	13	9.5	12	17
Hardness mg equivalent CaCO3/L	5	mg/L	72	55	74	110
Magnesium	0.5	mg/L	9.7	7.5	11	17

Client Sample ID			B2G_SW 1.40	B2G_SW 1.42	B2G_DUPLICA	B2G_DUPLICA
Sample Matrix			Water	Water	TE 1	TE 2
Eurofins Sample No.			B21-Ma48898	B21-Ma48899	B21-Ma48900	B21-Ma48901
Date Sampled			Mar 25, 2021	Mar 25, 2021	Mar 24, 2021	Mar 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			B2G_SW 1.40	B2G_SW 1.42	B2G_DUPLICA TE 1	B2G_DUPLICA TE 2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ma48898	B21-Ma48899	B21-Ma48900	B21-Ma48901
Date Sampled			Mar 25, 2021	Mar 25, 2021	Mar 24, 2021	Mar 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	114	109	93	135
p-Terphenyl-d14 (surr.)	1	%	128	135	97	67
Ammonia (as N)	0.01	mg/L	0.02	0.03	0.05	0.03
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	540	690	79	510
Nitrate & Nitrite (as N)	0.05	mg/L	1.5	1.6	0.18	1.5
Nitrate (as N)	0.02	mg/L	1.5	1.5	0.17	1.5
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	R16 < 0.5	R16 < 0.5	R16 < 0.5	R16 < 0.5
Phosphorus reactive (as P)	0.01	mg/L	0.09	0.09	0.06	0.09
Salinity (expressed as TDS)*	10	mg/L	310	460	230	400
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.5	< 0.2	0.7	1.0
Total Nitrogen (as N)*	0.2	mg/L	1.5	1.6	0.88	2.5
Total Suspended Solids Dried at 103–105°C	1	mg/L	91	42	270	100
Turbidity	1	NTU	80	30	300	82
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.001	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	34	42	3.1	34
Hardness mg equivalent CaCO3/L	5	mg/L	220	260	18	220
Magnesium	0.5	mg/L	33	39	2.6	33

Client Sample ID			B2G_FIELD BLANK
Sample Matrix			Water
Eurofins Sample No.			B21-Ma48902
Date Sampled			Mar 24, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001

Client Sample ID			B2G FIELD BLANK
Sample Matrix			Water
Eurofins Sample No.			B21-Ma48902
Date Sampled			Mar 24, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	142
p-Terphenyl-d14 (surr.)	1	%	83
Ammonia (as N)	0.01	mg/L	< 0.01
Chlorophyll a	5	ug/L	< 5
Conductivity (at 25°C)	10	uS/cm	< 10
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02
Phosphate total (as P)	0.01	mg/L	^{R16} < 0.5
Phosphorus reactive (as P)	0.01	mg/L	< 0.01
Salinity (expressed as TDS)*	10	mg/L	56
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.3
Total Nitrogen (as N)*	0.2	mg/L	0.3
Total Suspended Solids Dried at 103–105°C	1	mg/L	< 1
Turbidity	1	NTU	< 1
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005
Hardness Set			
Calcium	0.5	mg/L	< 0.5
Hardness mg equivalent CaCO3/L	5	mg/L	< 5
Magnesium	0.5	mg/L	< 0.5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 30, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Mar 30, 2021	2 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Melbourne	Mar 30, 2021	28 Days
- Method: LTM-INO-4030 Conductivity			
Salinity (expressed as TDS)*	Melbourne	Mar 31, 2021	7 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Melbourne	Mar 30, 2021	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Turbidity	Melbourne	Mar 31, 2021	2 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Metals M8 filtered	Sydney	Mar 26, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Hardness Set			
Calcium	Melbourne	Mar 30, 2021	180 Days
- Method:			
Hardness mg equivalent CaCO ₃ /L	Melbourne	Mar 30, 2021	28 Days
- Method:			
Magnesium	Melbourne	Mar 30, 2021	180 Days
- Method:			
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N)	Melbourne	Mar 30, 2021	28 Days
- Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Mar 30, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrate (as N)	Melbourne	Mar 30, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrite (as N)	Melbourne	Mar 30, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Phosphate total (as P)	Melbourne	Mar 30, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Mar 30, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Mar 30, 2021	7 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

Melbourne
6 Monterey Road
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NATA # 1261
Site # 1254 & 14271

Sydney
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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ

Order No.:
Report #: 783161
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Mar 25, 2021 3:20 PM
Due: Apr 1, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794												X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G_SW 1.06 HFE	Mar 24, 2021	9:00AM	Water	B21-Ma48886	X	X	X	X	X	X	X	X	X
2	B2G_SW 1.7 HFE	Mar 24, 2021	10:00AM	Water	B21-Ma48887	X	X	X	X	X	X	X	X	X
3	B2G_SW 1.11 HFE	Mar 24, 2021	11:30AM	Water	B21-Ma48888	X	X	X	X	X	X	X	X	X
4	B2G_SW 1.16 HFE	Mar 24, 2021	1:30PM	Water	B21-Ma48889	X	X	X	X	X	X	X	X	X
5	B2G_SW 1.18 HFE	Mar 23, 2021	4:00PM	Water	B21-Ma48890	X	X	X	X	X	X	X	X	X
6	B2G_SW 1.20R2	Mar 23, 2021	3:15PM	Water	B21-Ma48891	X	X	X	X	X	X	X	X	X

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
 Bowen Hills, Brisbane
 QLD 4006
Project Name: B2G SWQ

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Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794												X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
7	B2G_SW 1.23	Mar 23, 2021	2:00PM	Water	B21-Ma48892	X	X	X	X	X	X	X	X	X
8	B2G_SW 1.24 HFE	Mar 25, 2021	8:15AM	Water	B21-Ma48893	X	X	X	X	X	X	X	X	X
9	B2G_SW 1.27	Mar 23, 2021	1:00PM	Water	B21-Ma48894	X	X	X	X	X	X	X	X	X
10	B2G_SW 1.30	Mar 23, 2021	10:50AM	Water	B21-Ma48895	X	X	X	X	X	X	X	X	X
11	B2G_SW 1.32	Mar 24, 2021	4:30PM	Water	B21-Ma48896	X	X	X	X	X	X	X	X	X
12	B2G_SW 1.39	Mar 25, 2021	9:45AM	Water	B21-Ma48897	X	X	X	X	X	X	X	X	X
13	B2G_SW 1.40	Mar 25, 2021	10:30AM	Water	B21-Ma48898	X	X	X	X	X	X	X	X	X
14	B2G_SW 1.42	Mar 25, 2021	11:30AM	Water	B21-Ma48899	X	X	X	X	X	X	X	X	X
15	B2G_DUPLIC ATE 1	Mar 24, 2021		Water	B21-Ma48900	X	X	X	X	X	X	X	X	X
16	B2G_DUPLIC	Mar 25, 2021		Water	B21-Ma48901	X	X	X	X	X	X	X	X	X

Australia

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Phone : +61 3 8564 5000
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Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ

Order No.:
Report #: 783161
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Mar 25, 2021 3:20 PM
Due: Apr 1, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103–105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794												X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
	ATE 2													
17	B2G_FIELD BLANK	Mar 24, 2021		Water	B21-Ma48902	X	X	X	X	X	X	X	X	X
Test Counts						17	17	17	17	17	17	17	17	17

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Hardness Set							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	83			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	124			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	%	125			70-130	Pass	
Benzo(g,h,i)perylene	%	109			70-130	Pass	
Benzo(k)fluoranthene	%	103			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene		%	91			70-130	Pass	
Dibenz(a,h)anthracene		%	88			70-130	Pass	
Fluoranthene		%	89			70-130	Pass	
Fluorene		%	76			70-130	Pass	
Indeno(1,2,3-cd)pyrene		%	98			70-130	Pass	
Naphthalene		%	71			70-130	Pass	
Phenanthrene		%	115			70-130	Pass	
Pyrene		%	89			70-130	Pass	
LCS - % Recovery								
Ammonia (as N)		%	100			70-130	Pass	
Conductivity (at 25°C)		%	117			70-130	Pass	
Nitrate & Nitrite (as N)		%	100			70-130	Pass	
Nitrate (as N)		%	100			70-130	Pass	
Nitrite (as N)		%	108			70-130	Pass	
Phosphate total (as P)		%	119			70-130	Pass	
Phosphorus reactive (as P)		%	111			70-130	Pass	
Total Kjeldahl Nitrogen (as N)		%	73			70-130	Pass	
Total Suspended Solids Dried at 103–105°C		%	91			70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic (filtered)		%	94			80-120	Pass	
Cadmium (filtered)		%	95			80-120	Pass	
Chromium (filtered)		%	100			80-120	Pass	
Copper (filtered)		%	103			80-120	Pass	
Lead (filtered)		%	101			80-120	Pass	
Mercury (filtered)		%	105			80-120	Pass	
Nickel (filtered)		%	99			80-120	Pass	
Zinc (filtered)		%	99			80-120	Pass	
LCS - % Recovery								
Hardness Set								
Calcium		%	109			80-120	Pass	
Magnesium		%	112			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-Ma48886	CP	%	100		70-130	Pass	
Nitrate & Nitrite (as N)	B21-Ma48886	CP	%	97		70-130	Pass	
Nitrate (as N)	B21-Ma48886	CP	%	97		70-130	Pass	
Nitrite (as N)	B21-Ma48886	CP	%	97		70-130	Pass	
Total Suspended Solids Dried at 103–105°C	M21-Ma45960	NCP	%	99		70-130	Pass	
Spike - % Recovery								
Hardness Set								
				Result 1				
Calcium	B21-Ma48894	CP	%	101		75-125	Pass	
Magnesium	B21-Ma48894	CP	%	98		75-125	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-Ma48896	CP	%	98		70-130	Pass	
Nitrate & Nitrite (as N)	B21-Ma48896	CP	%	91		70-130	Pass	
Nitrate (as N)	B21-Ma48896	CP	%	91		70-130	Pass	
Nitrite (as N)	B21-Ma48896	CP	%	101		70-130	Pass	
Spike - % Recovery								
				Result 1				
Total Kjeldahl Nitrogen (as N)	B21-Ma48899	CP	%	73		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M21-Ma50946	NCP	%	98			70-130	Pass	
Acenaphthylene	M21-Ma50946	NCP	%	86			70-130	Pass	
Anthracene	M21-Ma50946	NCP	%	95			70-130	Pass	
Benz(a)anthracene	M21-Ma50946	NCP	%	102			70-130	Pass	
Benzo(a)pyrene	M21-Ma50946	NCP	%	79			70-130	Pass	
Benzo(b&j)fluoranthene	M21-Ma50946	NCP	%	102			70-130	Pass	
Benzo(g,h,i)perylene	M21-Ma50946	NCP	%	116			70-130	Pass	
Benzo(k)fluoranthene	M21-Ma50946	NCP	%	85			70-130	Pass	
Chrysene	M21-Ma50946	NCP	%	111			70-130	Pass	
Dibenz(a,h)anthracene	M21-Ma50946	NCP	%	83			70-130	Pass	
Fluoranthene	M21-Ma50946	NCP	%	129			70-130	Pass	
Fluorene	M21-Ma50946	NCP	%	94			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M21-Ma50946	NCP	%	78			70-130	Pass	
Naphthalene	M21-Ma50946	NCP	%	94			70-130	Pass	
Phenanthrene	M21-Ma50946	NCP	%	126			70-130	Pass	
Pyrene	M21-Ma50946	NCP	%	127			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	B21-Ma48902	CP	%	91			75-125	Pass	
Cadmium (filtered)	B21-Ma48902	CP	%	95			75-125	Pass	
Chromium (filtered)	B21-Ma48902	CP	%	100			75-125	Pass	
Copper (filtered)	B21-Ma48902	CP	%	102			75-125	Pass	
Lead (filtered)	B21-Ma48902	CP	%	94			75-125	Pass	
Mercury (filtered)	B21-Ma48902	CP	%	103			75-125	Pass	
Nickel (filtered)	B21-Ma48902	CP	%	100			75-125	Pass	
Zinc (filtered)	B21-Ma48902	CP	%	102			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M21-Ma46542	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B21-Ma48886	CP	mg/L	0.03	0.03	12	30%	Pass	
Conductivity (at 25°C)	M21-Ma50449	NCP	uS/cm	53000	53000	<1	30%	Pass	
Nitrate & Nitrite (as N)	B21-Ma48886	CP	mg/L	0.18	0.19	3.0	30%	Pass	
Nitrate (as N)	B21-Ma48886	CP	mg/L	0.18	0.19	3.0	30%	Pass	
Nitrite (as N)	B21-Ma48886	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Turbidity	B21-Ma48886	CP	NTU	320	320	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-Ma48886	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	B21-Ma48886	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	B21-Ma48886	CP	mg/L	0.002	0.002	6.0	30%	Pass
Copper (filtered)	B21-Ma48886	CP	mg/L	0.002	0.002	2.0	30%	Pass
Lead (filtered)	B21-Ma48886	CP	mg/L	0.002	0.002	8.0	30%	Pass
Mercury (filtered)	B21-Ma48886	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-Ma48886	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	B21-Ma48886	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Hardness Set				Result 1	Result 2	RPD		
Calcium	B21-Ma48894	CP	mg/L	13	13	2.0	30%	Pass
Magnesium	B21-Ma48894	CP	mg/L	9.7	10	5.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Ma48895	CP	mg/L	0.22	0.21	5.0	30%	Pass
Nitrate & Nitrite (as N)	B21-Ma48895	CP	mg/L	0.17	0.16	3.0	30%	Pass
Nitrate (as N)	B21-Ma48895	CP	mg/L	0.17	0.16	3.0	30%	Pass
Nitrite (as N)	B21-Ma48895	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Phosphate total (as P)	B21-Ma48895	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Ma48896	CP	mg/L	0.03	0.02	16	30%	Pass
Nitrate & Nitrite (as N)	B21-Ma48896	CP	mg/L	0.91	0.90	1.0	30%	Pass
Nitrate (as N)	B21-Ma48896	CP	mg/L	0.91	0.90	1.0	30%	Pass
Nitrite (as N)	B21-Ma48896	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Turbidity	B21-Ma48896	CP	NTU	330	320	2.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-Ma48896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	B21-Ma48896	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	B21-Ma48896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-Ma48896	CP	mg/L	0.002	0.002	1.0	30%	Pass
Lead (filtered)	B21-Ma48896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	B21-Ma48896	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-Ma48896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	B21-Ma48896	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Kjeldahl Nitrogen (as N)	B21-Ma48898	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Suspended Solids Dried at 103–105°C	B21-Ma48901	CP	mg/L	100	91	12	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised by:

Alana Wadsworth	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Arrangement for the mutual recognition of the
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inspection and proficiency testing scheme providers
reports.

Attention: **James Bone**

Report **787581-W**
Project name **B2G SWQ**
Project ID **J11045**
Received Date **Apr 15, 2021**

Client Sample ID			B2G 1.40	DUPLICATE 2	B2G 1.39	B2G 1.42
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ap24010	B21-Ap24011	B21-Ap24012	B21-Ap24013
Date Sampled			Apr 15, 2021	Apr 15, 2021	Apr 15, 2021	Apr 15, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	61	98	62	78
p-Terphenyl-d14 (surr.)	1	%	110	82	91	53
Ammonia (as N)	0.01	mg/L	< 0.01	0.04	0.02	0.01
Chlorophyll a	5	ug/L	< 10	< 10	< 10	< 10
Conductivity (at 25°C)	10	uS/cm	1100	1000	1000	1200
Nitrate & Nitrite (as N)	0.05	mg/L	0.28	0.79	0.91	0.86
Nitrate (as N)	0.02	mg/L	0.26	0.79	0.91	0.84
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03	0.07	0.06	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	0.03	0.07	0.07	< 0.01
Salinity (determined from EC)*	20	mg/L	540	490	490	600
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.3	< 0.2	15	0.3
Total Nitrogen (as N)*	0.2	mg/L	0.58	0.79	15.91	1.16
Total Suspended Solids Dried at 103–105°C	2	mg/L	10	28	27	< 2
Turbidity	1	NTU	3.5	8.0	17	1.4

Client Sample ID			B2G 1.40	DUPLICATE 2	B2G 1.39	B2G 1.42
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ap24010	B21-Ap24011	B21-Ap24012	B21-Ap24013
Date Sampled			Apr 15, 2021	Apr 15, 2021	Apr 15, 2021	Apr 15, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	0.002	0.002	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.002	0.006	0.006	0.002
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	53	42	38	59
Hardness mg equivalent CaCO ₃ /L	5	mg/L	430	330	310	460
Magnesium	0.5	mg/L	74	56	53	75

Client Sample ID			B2G 1.2R	B2G 1.2	FIELD BLANK	B2G 1.30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ap24014	B21-Ap24015	B21-Ap24016	B21-Ap24017
Date Sampled			Apr 13, 2021	Apr 13, 2021	Apr 13, 2021	Apr 14, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	52	53	97	96
p-Terphenyl-d14 (surr.)	1	%	102	63	93	51
Ammonia (as N)	0.01	mg/L	0.06	0.06	< 0.01	0.03
Chlorophyll a	5	ug/L	< 10	< 10	< 10	< 10
Conductivity (at 25°C)	10	uS/cm	210	220	< 10	220
Nitrate & Nitrite (as N)	0.05	mg/L	0.74	0.73	< 0.05	0.30
Nitrate (as N)	0.02	mg/L	0.74	0.73	< 0.02	0.30
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.09	0.10	< 0.01	0.23
Phosphorus reactive (as P)	0.01	mg/L	0.06	0.07	< 0.01	0.19
Salinity (determined from EC)*	20	mg/L	100	110	< 20	110

Client Sample ID			B2G 1.2R Water B21-Ap24014 Apr 13, 2021	B2G 1.2 Water B21-Ap24015 Apr 13, 2021	FIELD BLANK Water B21-Ap24016 Apr 13, 2021	B2G 1.30 Water B21-Ap24017 Apr 14, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.9	0.5	0.8	0.9
Total Nitrogen (as N)*	0.2	mg/L	1.64	1.23	0.8	1.2
Total Suspended Solids Dried at 103–105°C	2	mg/L	31	25	< 2	84
Turbidity	1	NTU	20	28	< 1	55
Heavy Metals						
Arsenic	0.001	mg/L	0.004	0.005	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.002	0.004	< 0.001	0.002
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.002	0.003	< 0.001	0.003
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	8.1	10	< 0.5	14
Hardness mg equivalent CaCO ₃ /L	5	mg/L	43	52	< 5	66
Magnesium	0.5	mg/L	5.6	6.2	< 0.5	7.8

Client Sample ID			B2G 1.7 Water B21-Ap24018 Apr 13, 2021	B2G 1.11 Water B21-Ap24019 Mar 14, 2021	B2G 1.29 Water B21-Ap24020 Mar 14, 2021	B2G 1.33 Water B21-Ap24021 Mar 14, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	80	87	73	55
p-Terphenyl-d14 (surr.)	1	%	91	75	90	50
Ammonia (as N)	0.01	mg/L	0.14	0.05	0.04	0.02
Chlorophyll a	5	ug/L	< 10	< 10	19	< 10
Conductivity (at 25°C)	10	uS/cm	230	220	240	220
Nitrate & Nitrite (as N)	0.05	mg/L	0.38	0.06	< 0.05	0.34

Client Sample ID			B2G 1.7 Water B21-Ap24018 Apr 13, 2021	B2G 1.11 Water B21-Ap24019 Mar 14, 2021	B2G 1.29 Water B21-Ap24020 Mar 14, 2021	B2G 1.33 Water B21-Ap24021 Mar 14, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Nitrate (as N)	0.02	mg/L	0.38	0.06	< 0.02	0.34
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.08	0.07	0.77	0.24
Phosphorus reactive (as P)	0.01	mg/L	0.03	0.02	0.88	0.22
Salinity (determined from EC)*	20	mg/L	110	110	120	110
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.3	0.8	8.0	9.5
Total Nitrogen (as N)*	0.2	mg/L	1.68	0.86	8	9.84
Total Suspended Solids Dried at 103–105°C	2	mg/L	28	18	38	79
Turbidity	1	NTU	26	56	21	44
Heavy Metals						
Arsenic	0.001	mg/L	0.002	0.002	0.003	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	0.001	0.001	< 0.001
Copper	0.001	mg/L	0.002	0.002	0.001	0.002
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.001	0.003	0.008	0.003
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	9.6	9.8	15	15
Hardness mg equivalent CaCO ₃ /L	5	mg/L	47	48	79	75
Magnesium	0.5	mg/L	5.6	5.6	9.8	9.0

Client Sample ID			B2G 1.32 Water B21-Ap24022 Mar 14, 2021	DUPLICATE 1 Water B21-Ap24023 Apr 13, 2021	B2G 1.23 Water B21-Ap24024 Mar 14, 2021	B2G 1.6 Water B21-Ap24025 Mar 14, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	92	75	67	69
p-Terphenyl-d14 (surr.)	1	%	56	71	80	79

Client Sample ID			B2G 1.32 Water	DUPLICATE 1 Water	B2G 1.23 Water	B2G 1.6 Water
Sample Matrix			B21-Ap24022	B21-Ap24023	B21-Ap24024	B21-Ap24025
Eurofins Sample No.			Mar 14, 2021	Apr 13, 2021	Mar 14, 2021	Mar 14, 2021
Date Sampled						
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.02	0.03	0.08	0.10
Chlorophyll a	5	ug/L	< 10	< 10	< 10	< 10
Conductivity (at 25°C)	10	uS/cm	220	160	290	240
Nitrate & Nitrite (as N)	0.05	mg/L	0.29	0.34	0.11	0.48
Nitrate (as N)	0.02	mg/L	0.29	0.34	0.11	0.48
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.21	0.11	0.12	0.09
Phosphorus reactive (as P)	0.01	mg/L	0.19	0.04	0.07	0.06
Salinity (determined from EC)*	20	mg/L	110	79	140	120
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.6	1.0	0.8	0.8
Total Nitrogen (as N)*	0.2	mg/L	0.89	1.34	0.91	1.28
Total Suspended Solids Dried at 103–105°C	2	mg/L	58	34	35	27
Turbidity	1	NTU	53	110	54	22
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	< 0.001	0.002	0.002
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.002	0.003	0.003	0.002
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.003	0.002	0.003	0.001
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	13	11	12	11
Hardness mg equivalent CaCO ₃ /L	5	mg/L	67	46	50	48
Magnesium	0.5	mg/L	8.2	4.6	5.0	5.3

Client Sample ID			B2G 1.27 Water	B2G 1.3 Water	B2G 1.16 Water	B2G 1.24 Water
Sample Matrix			B21-Ap24026	B21-Ap24027	B21-Ap24028	B21-Ap24029
Eurofins Sample No.			Mar 14, 2021	Mar 14, 2021	Mar 14, 2021	Mar 14, 2021
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			B2G 1.27	B2G 1.3	B2G 1.16	B2G 1.24
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Ap24026	B21-Ap24027	B21-Ap24028	B21-Ap24029
Date Sampled			Mar 14, 2021	Mar 14, 2021	Mar 14, 2021	Mar 14, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	70	62	94	80
p-Terphenyl-d14 (surr.)	1	%	92	111	71	72
Ammonia (as N)	0.01	mg/L	0.03	0.03	0.23	0.09
Chlorophyll a	5	ug/L	< 10	< 10	< 10	< 10
Conductivity (at 25°C)	10	uS/cm	220	230	160	170
Nitrate & Nitrite (as N)	0.05	mg/L	0.31	0.39	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.31	0.33	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	0.06	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.25	0.09	0.15	0.32
Phosphorus reactive (as P)	0.01	mg/L	0.07	0.05	0.06	0.21
Salinity (determined from EC)*	20	mg/L	110	110	79	83
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.6	0.3	0.9	9.5
Total Nitrogen (as N)*	0.2	mg/L	0.91	0.69	0.9	9.5
Total Suspended Solids Dried at 103–105°C	2	mg/L	98	24	62	85
Turbidity	1	NTU	79	38	83	84
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	0.002	0.001	0.002
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.002	0.002	0.002	0.004
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.003	0.002	0.002	0.005
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Hardness Set						
Calcium	0.5	mg/L	14	10	12	6.5
Hardness mg equivalent CaCO ₃ /L	5	mg/L	69	50	49	37
Magnesium	0.5	mg/L	8.0	5.9	4.4	5.1

Client Sample ID			B2G 1.18
Sample Matrix			Water
Eurofins Sample No.			B21-Ap24030
Date Sampled			Apr 13, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benzo(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{NO/}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001

Client Sample ID			B2G 1.18
Sample Matrix			Water
Eurofins Sample No.			B21-Ap24030
Date Sampled			Apr 13, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	67
p-Terphenyl-d14 (surr.)	1	%	68
Ammonia (as N)	0.01	mg/L	0.08
Chlorophyll a	5	ug/L	< 10
Conductivity (at 25°C)	10	uS/cm	160
Nitrate & Nitrite (as N)	0.05	mg/L	0.35
Nitrate (as N)	0.02	mg/L	0.34
Nitrite (as N)	0.02	mg/L	< 0.02
Phosphate total (as P)	0.01	mg/L	0.13
Phosphorus reactive (as P)	0.01	mg/L	0.05
Salinity (determined from EC)*	20	mg/L	79
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.4
Total Nitrogen (as N)*	0.2	mg/L	0.75
Total Suspended Solids Dried at 103–105°C	2	mg/L	44
Turbidity	1	NTU	140
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	0.003
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.002
Zinc	0.005	mg/L	< 0.005
Hardness Set			
Calcium	0.5	mg/L	11
Hardness mg equivalent CaCO3/L	5	mg/L	46
Magnesium	0.5	mg/L	4.7

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Apr 20, 2021	7 Days
Chlorophyll a - Method: LTM-INO-4340 Chlorophyll a in Waters	Melbourne	Apr 22, 2021	2 Days
Conductivity (at 25°C) - Method: APHA 2510B	Brisbane	Apr 16, 2021	28 Days
Salinity (determined from EC)* - Method: LTM-INO-4030	Melbourne	Apr 22, 2021	0 Days
Total Suspended Solids Dried at 103–105°C - Method: APHA 2540 D	Brisbane	Apr 16, 2021	7 Days
Turbidity - Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)	Melbourne	Apr 22, 2021	2 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Brisbane	Apr 16, 2021	180 Days
Hardness Set			
Calcium - Method:	Melbourne	Apr 20, 2021	180 Days
Hardness mg equivalent CaCO ₃ /L - Method:	Melbourne	Apr 20, 2021	28 Days
Magnesium - Method:	Melbourne	Apr 20, 2021	180 Days
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N) - Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA	Melbourne	Apr 20, 2021	28 Days
Nitrate & Nitrite (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	Apr 20, 2021	28 Days
Nitrate (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	Apr 20, 2021	28 Days
Nitrite (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	Apr 20, 2021	2 Days
Phosphate total (as P) - Method: LTM-INO-4040 Phosphate by CFA	Melbourne	Apr 27, 2021	28 Days
Phosphorus reactive (as P) - Method: APHA 4500-P	Melbourne	Apr 27, 2021	2 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	Apr 20, 2021	7 Days

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: J11045

Order No.:
Report #: 787581
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Apr 15, 2021 11:50 AM
Due: Apr 22, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Hardness Set	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G 1.40	Apr 15, 2021	7:25AM	Water	B21-Ap24010	X	X	X	X	X	X	X	X	X
2	DUPLICATE 2	Apr 15, 2021		Water	B21-Ap24011	X	X	X	X	X	X	X	X	X
3	B2G 1.39	Apr 15, 2021	6:45AM	Water	B21-Ap24012	X	X	X	X	X	X	X	X	X
4	B2G 1.42	Apr 15, 2021	8:15AM	Water	B21-Ap24013	X	X	X	X	X	X	X	X	X
5	B2G 1.2R	Apr 13, 2021	5:49PM	Water	B21-Ap24014	X	X	X	X	X	X	X	X	X
6	B2G 1.2	Apr 13, 2021	4:30PM	Water	B21-Ap24015	X	X	X	X	X	X	X	X	X
7	FIELD BLANK	Apr 13, 2021		Water	B21-Ap24016	X	X	X	X	X	X	X	X	X
8	B2G 1.30	Apr 14, 2021	3:55PM	Water	B21-Ap24017	X	X	X	X	X	X	X	X	X
9	B2G 1.7	Apr 13, 2021	12:06PM	Water	B21-Ap24018	X	X	X	X	X	X	X	X	X

Melbourne
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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 23736

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IANZ # 1327

Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: J11045

Order No.:
Report #: 787581
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Apr 15, 2021 11:50 AM
Due: Apr 22, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
10	B2G 1.11	Mar 14, 2021	10:10AM	Water	B21-Ap24019	X	X	X	X	X	X	X	X	X
11	B2G 1.29	Mar 14, 2021	3:13PM	Water	B21-Ap24020	X	X	X	X	X	X	X	X	X
12	B2G 1.33	Mar 14, 2021	5:03PM	Water	B21-Ap24021	X	X	X	X	X	X	X	X	X
13	B2G 1.32	Mar 14, 2021	4:36PM	Water	B21-Ap24022	X	X	X	X	X	X	X	X	X
14	DUPLICATE 1	Apr 13, 2021		Water	B21-Ap24023	X	X	X	X	X	X	X	X	X
15	B2G 1.23	Mar 14, 2021	12:33PM	Water	B21-Ap24024	X	X	X	X	X	X	X	X	X
16	B2G 1.6	Mar 14, 2021	8:00AM	Water	B21-Ap24025	X	X	X	X	X	X	X	X	X
17	B2G 1.27	Mar 14, 2021	2:36PM	Water	B21-Ap24026	X	X	X	X	X	X	X	X	X
18	B2G 1.3	Mar 14, 2021	8:55AM	Water	B21-Ap24027	X	X	X	X	X	X	X	X	X
19	B2G 1.16	Mar 14, 2021	11:26AM	Water	B21-Ap24028	X	X	X	X	X	X	X	X	X
20	B2G 1.24	Mar 14, 2021	1:20PM	Water	B21-Ap24029	X	X	X	X	X	X	X	X	X

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Project ID: J11045

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Received: Apr 15, 2021 11:50 AM
Due: Apr 22, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Hardness Set	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory														
External Laboratory														
21	B2G 1.18	Apr 13, 2021	1:25PM	Water	B21-Ap24030	X	X	X	X	X	X	X	X	X
Test Counts						21	21	21	21	21	21	21	21	21

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 2			2	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Hardness Set							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	111			70-130	Pass	
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	128			70-130	Pass	
Benz(a)anthracene	%	86			70-130	Pass	
Benzo(a)pyrene	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	%	104			70-130	Pass	
Benzo(g,h,i)perylene	%	77			70-130	Pass	
Benzo(k)fluoranthene	%	118			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene		%	96			70-130	Pass	
Dibenz(a,h)anthracene		%	85			70-130	Pass	
Fluoranthene		%	108			70-130	Pass	
Fluorene		%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene		%	80			70-130	Pass	
Naphthalene		%	82			70-130	Pass	
Phenanthrene		%	92			70-130	Pass	
Pyrene		%	90			70-130	Pass	
LCS - % Recovery								
Ammonia (as N)		%	96			70-130	Pass	
Nitrate & Nitrite (as N)		%	100			70-130	Pass	
Nitrate (as N)		%	100			70-130	Pass	
Nitrite (as N)		%	106			70-130	Pass	
Phosphate total (as P)		%	103			70-130	Pass	
Phosphorus reactive (as P)		%	116			70-130	Pass	
Total Kjeldahl Nitrogen (as N)		%	130			70-130	Pass	
Total Suspended Solids Dried at 103–105°C		%	98			70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic		%	104			80-120	Pass	
Cadmium		%	107			80-120	Pass	
Chromium		%	106			80-120	Pass	
Copper		%	106			80-120	Pass	
Lead		%	108			80-120	Pass	
Mercury		%	113			80-120	Pass	
Nickel		%	107			80-120	Pass	
Zinc		%	102			80-120	Pass	
LCS - % Recovery								
Hardness Set								
Calcium		%	107			80-120	Pass	
Magnesium		%	96			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	M21-Ap13434	NCP	%	111		70-130	Pass	
Acenaphthylene	M21-Ap13434	NCP	%	94		70-130	Pass	
Anthracene	M21-Ap13434	NCP	%	86		70-130	Pass	
Benz(a)anthracene	M21-Ap13434	NCP	%	104		70-130	Pass	
Benzo(a)pyrene	M21-Ap13434	NCP	%	78		70-130	Pass	
Benzo(b&j)fluoranthene	M21-Ap13434	NCP	%	117		70-130	Pass	
Benzo(g,h,i)perylene	M21-Ap13434	NCP	%	111		70-130	Pass	
Benzo(k)fluoranthene	M21-Ap13434	NCP	%	111		70-130	Pass	
Chrysene	M21-Ap13434	NCP	%	103		70-130	Pass	
Dibenz(a,h)anthracene	M21-Ap13434	NCP	%	91		70-130	Pass	
Fluoranthene	M21-Ap13434	NCP	%	121		70-130	Pass	
Fluorene	M21-Ap13434	NCP	%	112		70-130	Pass	
Indeno(1.2.3-cd)pyrene	M21-Ap13434	NCP	%	92		70-130	Pass	
Naphthalene	M21-Ap13434	NCP	%	92		70-130	Pass	
Phenanthrene	M21-Ap13434	NCP	%	113		70-130	Pass	
Pyrene	M21-Ap13434	NCP	%	123		70-130	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	S21-Ap25039	NCP	%	97		70-130	Pass	
Nitrate & Nitrite (as N)	S21-Ap25039	NCP	%	103		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nitrate (as N)	S21-Ap25039	NCP	%	102			70-130	Pass	
Nitrite (as N)	S21-Ap25039	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Hardness Set				Result 1					
Calcium	M21-Ap30025	NCP	%	119			75-125	Pass	
Magnesium	M21-Ap30025	NCP	%	122			75-125	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	B21-Ap24011	CP	%	99			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B21-Ap24011	CP	%	120			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B21-Ap24011	CP	%	109			75-125	Pass	
Cadmium	B21-Ap24011	CP	%	106			75-125	Pass	
Chromium	B21-Ap24011	CP	%	100			75-125	Pass	
Copper	B21-Ap24011	CP	%	94			75-125	Pass	
Lead	B21-Ap24011	CP	%	100			75-125	Pass	
Mercury	B21-Ap24011	CP	%	102			75-125	Pass	
Nickel	B21-Ap24011	CP	%	96			75-125	Pass	
Zinc	B21-Ap24011	CP	%	96			75-125	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	B21-Ap24021	CP	%	90			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B21-Ap24021	CP	%	107			75-125	Pass	
Cadmium	B21-Ap24021	CP	%	107			75-125	Pass	
Chromium	B21-Ap24021	CP	%	105			75-125	Pass	
Copper	B21-Ap24021	CP	%	101			75-125	Pass	
Lead	B21-Ap24021	CP	%	104			75-125	Pass	
Mercury	B21-Ap24021	CP	%	110			75-125	Pass	
Nickel	B21-Ap24021	CP	%	103			75-125	Pass	
Zinc	B21-Ap24021	CP	%	102			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&i)fluoranthene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M21-Ap22402	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Ap24010	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Conductivity (at 25°C)	B21-Ap24010	CP	uS/cm	1100	1100	<1	30%	Pass
Nitrate & Nitrite (as N)	B21-Ap24010	CP	mg/L	0.28	0.28	<1	30%	Pass
Nitrate (as N)	B21-Ap24010	CP	mg/L	0.26	0.27	3.0	30%	Pass
Nitrite (as N)	B21-Ap24010	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Total Kjeldahl Nitrogen (as N)	B21-Ap24010	CP	mg/L	0.3	< 0.2	150	30%	Fail
Turbidity	S21-Ap14262	NCP	NTU	1.4	1.5	6.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	B21-Ap24010	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chromium	B21-Ap24010	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	B21-Ap24010	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead	B21-Ap24010	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury	B21-Ap24010	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	B21-Ap24010	CP	mg/L	0.002	0.002	<1	30%	Pass
Zinc	B21-Ap24010	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Hardness Set				Result 1	Result 2	RPD		
Calcium	M21-Ap30025	NCP	mg/L	68	72	5.0	30%	Pass
Magnesium	M21-Ap30025	NCP	mg/L	120	120	4.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-Ap24020	CP	uS/cm	240	240	<1	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-Ap24020	CP	mg/L	38	39	1.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	B21-Ap24020	CP	mg/L	0.003	0.002	14	30%	Pass
Cadmium	B21-Ap24020	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Copper	B21-Ap24020	CP	mg/L	0.001	0.001	8.0	30%	Pass
Lead	B21-Ap24020	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Nickel	B21-Ap24020	CP	mg/L	0.008	0.008	2.0	30%	Pass
Zinc	B21-Ap24020	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-Ap24030	CP	uS/cm	160	160	<1	30%	Pass
Total Kjeldahl Nitrogen (as N)	B21-Ap24030	CP	mg/L	0.4	0.4	15	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-Ap24030	CP	mg/L	44	37	17	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	B21-Ap24030	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	B21-Ap24030	CP	mg/L	0.003	0.003	5.0	30%	Pass
Mercury	B21-Ap24030	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	B21-Ap24030	CP	mg/L	0.002	0.002	5.0	30%	Pass
Zinc	B21-Ap24030	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Alana Wadsworth	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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QLD 4006



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Attention: **James Bone**

Report **793315-W**
Project name **B2G SWQ**
Project ID **50001**
Received Date **May 07, 2021**

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12631	B21-My12632	B21-My12633	B21-My12634
Date Sampled			May 05, 2021	May 05, 2021	May 06, 2021	May 06, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	104	109	104	50
p-Terphenyl-d14 (surr.)	1	%	79	80	126	56
Ammonia (as N)	0.01	mg/L	0.04	0.03	0.03	0.05
Chlorophyll a	5	ug/L	< 5	< 5	17	15
Conductivity (at 25°C)	10	uS/cm	320	310	340	380
Nitrate & Nitrite (as N)	0.05	mg/L	1.3	1.3	0.15	0.08
Nitrate (as N)	0.02	mg/L	1.3	1.3	0.14	0.08
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.08	0.08	0.06	0.04
Phosphorus reactive (as P)	0.01	mg/L	0.04	0.04	0.01	0.01
Salinity (determined from EC)*	20	mg/L	176	171	187	209
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.7	< 0.2	0.5	0.9
Total Nitrogen (as N)*	0.2	mg/L	2	1.3	0.65	0.98
Total Suspended Solids Dried at 103–105°C	1	mg/L	19	20	14	25
Turbidity	1	NTU	22	14	16	29
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	23	31	21	26

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12631	B21-My12632	B21-My12633	B21-My12634
Date Sampled			May 05, 2021	May 05, 2021	May 06, 2021	May 06, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	0.007	0.005	0.002	0.004
Arsenic (filtered)	0.001	mg/L	0.004	0.003	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.003	0.002	0.002	0.002
Copper (filtered)	0.001	mg/L	0.002	0.001	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.003	0.002	0.002	0.003
Nickel (filtered)	0.001	mg/L	0.002	0.002	0.002	0.001
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.7	B2G 1.11	B2G 1.16	B2G 1.18
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12635	B21-My12636	B21-My12638	B21-My12639
Date Sampled			May 05, 2021	May 06, 2021	May 06, 2021	May 06, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	79	95	90	58
p-Terphenyl-d14 (surr.)	1	%	114	117	108	66
Ammonia (as N)	0.01	mg/L	0.05	0.07	0.05	0.06
Chlorophyll a	5	ug/L	43	7.5	47	7.5
Conductivity (at 25°C)	10	uS/cm	390	270	180	170
Nitrate & Nitrite (as N)	0.05	mg/L	0.15	< 0.05	< 0.05	0.15
Nitrate (as N)	0.02	mg/L	0.14	< 0.02	< 0.02	0.15

Client Sample ID			B2G 1.7	B2G 1.11	B2G 1.16	B2G 1.18
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12635	B21-My12636	B21-My12638	B21-My12639
Date Sampled			May 05, 2021	May 06, 2021	May 06, 2021	May 06, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.04	0.04	0.07	0.05
Phosphorus reactive (as P)	0.01	mg/L	0.01	0.02	0.03	0.02
Salinity (determined from EC)*	20	mg/L	215	149	99	94
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.0	1.1	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	1.15	1.1	< 0.2	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	22	18	13	14
Turbidity	1	NTU	18	23	95	140
Calcium Hardness mg equivalent CaCO ₃ /L	5	mg/L	34	22	26	24
Heavy Metals						
Arsenic	0.001	mg/L	0.002	0.003	0.002	0.002
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.002	0.002	0.003	0.005
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	0.003
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.002	0.002	0.002	0.002
Nickel (filtered)	0.001	mg/L	< 0.001	0.002	0.002	0.003
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.23	B2G 1.24	B2G 1.27	B2G 1.29
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12641	B21-My12642	B21-My12643	B21-My12644
Date Sampled			May 06, 2021	May 06, 2021	May 06, 2021	May 06, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			B2G 1.23	B2G 1.24	B2G 1.27	B2G 1.29
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12641	B21-My12642	B21-My12643	B21-My12644
Date Sampled			May 06, 2021	May 06, 2021	May 06, 2021	May 06, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	79	90	73	59
p-Terphenyl-d14 (surr.)	1	%	88	114	60	67
Ammonia (as N)	0.01	mg/L	0.03	0.07	< 0.01	0.04
Chlorophyll a	5	ug/L	< 5	15	< 5	9.6
Conductivity (at 25°C)	10	uS/cm	300	180	270	260
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.03	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.07	0.28	0.11	0.89
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.09	0.12	0.60
Salinity (determined from EC)*	20	mg/L	165	99	149	143
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	0.7	0.5
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	0.7	0.5
Total Suspended Solids Dried at 103–105°C	1	mg/L	10	39	18	16
Turbidity	1	NTU	58	130	17	24
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	33	22	37	41
Heavy Metals						
Arsenic	0.001	mg/L	0.003	0.003	0.002	0.003
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.003	0.004	0.002	0.002
Copper (filtered)	0.001	mg/L	0.002	0.003	0.001	0.002
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.003	0.008	0.002	0.008
Nickel (filtered)	0.001	mg/L	0.003	0.005	0.002	0.008
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.30	B2G 1.32	B2G 1.33	B2G 1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12645	B21-My12646	B21-My12647	B21-My12648
Date Sampled			May 06, 2021	May 06, 2021	May 06, 2021	May 07, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			B2G 1.30	B2G 1.32	B2G 1.33	B2G 1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12645	B21-My12646	B21-My12647	B21-My12648
Date Sampled			May 06, 2021	May 06, 2021	May 06, 2021	May 07, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	105	113	145	77
p-Terphenyl-d14 (surr.)	1	%	68	78	105	70
Ammonia (as N)	0.01	mg/L	0.03	0.03	0.02	0.05
Chlorophyll a	5	ug/L	< 5	33	8.5	< 5
Conductivity (at 25°C)	10	uS/cm	270	290	290	830
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	1.0
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	1.0
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.03
Phosphate total (as P)	0.01	mg/L	0.11	0.14	0.16	0.20
Phosphorus reactive (as P)	0.01	mg/L	0.08	0.10	0.11	0.14
Salinity (determined from EC)*	20	mg/L	149	160	160	457
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	< 0.2	1
Total Suspended Solids Dried at 103–105°C	1	mg/L	12	4.4	5.4	31
Turbidity	1	NTU	13	9.0	3.8	45
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	26	42	30	96
Heavy Metals						
Arsenic	0.001	mg/L	0.002	0.003	0.002	0.003
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.003	0.004	0.002	0.004
Copper (filtered)	0.001	mg/L	0.001	0.002	0.001	0.003
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.003	0.003	0.004	0.004
Nickel (filtered)	0.001	mg/L	0.002	0.003	0.003	0.004
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	0.018	< 0.005	< 0.005

Client Sample ID			B2G 1.40 Water B21-My12649 May 07, 2021	B2G 1.42 Water B21-My12650 May 07, 2021	F BLANK Water B21-My12651 May 06, 2021	DUP 1 Water B21-My12652 May 07, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	132	96	65	61
p-Terphenyl-d14 (surr.)	1	%	123	105	108	97
Ammonia (as N)	0.01	mg/L	0.03	0.04	< 0.01	0.02
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	720	960	< 10	720
Nitrate & Nitrite (as N)	0.05	mg/L	1.5	2.0	< 0.05	1.5
Nitrate (as N)	0.02	mg/L	1.5	1.9	< 0.02	1.5
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.09	0.09	< 0.01	0.09
Phosphorus reactive (as P)	0.01	mg/L	0.05	0.06	< 0.01	0.05
Salinity (determined from EC)*	20	mg/L	396	528	< 10	396
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	1.5	2	< 0.2	1.5
Total Suspended Solids Dried at 103–105°C	1	mg/L	31	19	2.0	26
Turbidity	1	NTU	23	13	< 1	28
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	87	100	< 5	83
Heavy Metals						
Arsenic	0.001	mg/L	0.002	0.002	0.002	0.004
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.003	0.002	< 0.001	0.004
Copper (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.002	0.002	< 0.001	0.003
Nickel (filtered)	0.001	mg/L	0.001	0.002	< 0.001	0.001

Client Sample ID			B2G 1.40	B2G 1.42	F BLANK	DUP 1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My12649	B21-My12650	B21-My12651	B21-My12652
Date Sampled			May 07, 2021	May 07, 2021	May 06, 2021	May 07, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Zinc	0.005	mg/L	< 0.005	< 0.005	< 0.005	0.006
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			DUP 2	TRIP
Sample Matrix			Water	Water
Eurofins Sample No.			B21-My12653	B21-My12654
Date Sampled			May 07, 2021	May 07, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	56	81
p-Terphenyl-d14 (surr.)	1	%	85	128
Ammonia (as N)	0.01	mg/L	0.06	0.03
Chlorophyll a	5	ug/L	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	840	730
Nitrate & Nitrite (as N)	0.05	mg/L	1.0	1.5
Nitrate (as N)	0.02	mg/L	0.99	1.5
Nitrite (as N)	0.02	mg/L	0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.20	0.10
Phosphorus reactive (as P)	0.01	mg/L	0.38	0.05
Salinity (determined from EC)*	20	mg/L	462	396
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	1	1.5
Total Suspended Solids Dried at 103–105°C	1	mg/L	32	26
Turbidity	1	NTU	40	28
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	91	87
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002

Client Sample ID			DUP 2	TRIP
Sample Matrix			Water	Water
Eurofins Sample No.			B21-My12653	B21-My12654
Date Sampled			May 07, 2021	May 07, 2021
Test/Reference	LOR	Unit		
Heavy Metals				
Chromium	0.001	mg/L	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	0.004	0.003
Copper (filtered)	0.001	mg/L	0.003	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.005	0.003
Nickel (filtered)	0.001	mg/L	0.005	0.004
Zinc	0.005	mg/L	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	May 12, 2021	7 Days
Chlorophyll a - Method: LTM-INO-4340 Chlorophyll a in Waters	Melbourne	May 13, 2021	2 Days
Conductivity (at 25°C) - Method: APHA 2510B	Brisbane	May 07, 2021	28 Days
Salinity (determined from EC)* - Method: LTM-INO-4030	Melbourne	May 13, 2021	0 Days
Total Suspended Solids Dried at 103–105°C - Method: APHA 2540 D	Brisbane	May 07, 2021	7 Days
Turbidity - Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)	Melbourne	May 14, 2021	2 Days
Calcium Hardness mg equivalent CaCO ₃ /L - Method: APHA 2340B Hardness by Calculation	Melbourne	May 12, 2021	28 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Brisbane	May 07, 2021	180 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Brisbane	May 07, 2021	28 Days
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N) - Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA	Melbourne	May 12, 2021	28 Days
Nitrate & Nitrite (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	May 12, 2021	28 Days
Nitrate (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	May 12, 2021	28 Days
Nitrite (as N) - Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA	Melbourne	May 12, 2021	2 Days
Phosphate total (as P) - Method: LTM-INO-4040 Phosphate by CFA	Melbourne	May 12, 2021	28 Days
Phosphorus reactive (as P) - Method: APHA 4500-P	Melbourne	May 12, 2021	2 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	May 12, 2021	7 Days

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 50001

Order No.:
Report #: 793315
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: May 7, 2021 1:00 PM
Due: May 14, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	CANCELLED	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X		X	X			X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794							X		X		X			X	X	
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	B2G 1.2	May 05, 2021	5:36PM	Water	B21-My12631	X		X	X	X	X	X	X	X	X	X
2	B2G 1.2R	May 05, 2021	6:15PM	Water	B21-My12632	X		X	X	X	X	X	X	X	X	X
3	B2G 1.3	May 06, 2021	8:44AM	Water	B21-My12633	X		X	X	X	X	X	X	X	X	X
4	B2G 1.6	May 06, 2021	7:51AM	Water	B21-My12634	X		X	X	X	X	X	X	X	X	X
5	B2G 1.7	May 05, 2021	2:05PM	Water	B21-My12635	X		X	X	X	X	X	X	X	X	X
6	B2G 1.11	May 06, 2021	10:42AM	Water	B21-My12636	X		X	X	X	X	X	X	X	X	X
7	B2G 1.14	May 05, 2021	3:10PM	Water	B21-My12637		X									
8	B2G 1.16	May 06, 2021	11:46AM	Water	B21-My12638	X		X	X	X	X	X	X	X	X	X
9	B2G 1.18	May 06, 2021	12:31PM	Water	B21-My12639	X		X	X	X	X	X	X	X	X	X

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6 Monterey Road
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NATA # 1261
Site # 1254 & 14271

Sydney
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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
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Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

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IANZ # 1327

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Phone : 0800 856 450
IANZ # 1290

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 50001

Order No.:
Report #: 793315
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: May 7, 2021 1:00 PM
Due: May 14, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	CANCELLED	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X		X	X			X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794							X		X		X			X	X	
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
10	B2G 1.20R2	May 06, 2021	1:18PM	Water	B21-My12640		X									
11	B2G 1.23	May 06, 2021	2:10PM	Water	B21-My12641	X		X	X	X	X	X	X	X	X	X
12	B2G 1.24	May 06, 2021	2:43PM	Water	B21-My12642	X		X	X	X	X	X	X	X	X	X
13	B2G 1.27	May 06, 2021	3:13PM	Water	B21-My12643	X		X	X	X	X	X	X	X	X	X
14	B2G 1.29	May 06, 2021	3:43PM	Water	B21-My12644	X		X	X	X	X	X	X	X	X	X
15	B2G 1.30	May 06, 2021	4:30PM	Water	B21-My12645	X		X	X	X	X	X	X	X	X	X
16	B2G 1.32	May 06, 2021	5:25PM	Water	B21-My12646	X		X	X	X	X	X	X	X	X	X
17	B2G 1.33	May 06, 2021	5:03PM	Water	B21-My12647	X		X	X	X	X	X	X	X	X	X
18	B2G 1.39	May 07, 2021	7:52AM	Water	B21-My12648	X		X	X	X	X	X	X	X	X	X
19	B2G 1.40	May 07, 2021	6:50AM	Water	B21-My12649	X		X	X	X	X	X	X	X	X	X
20	B2G 1.42	May 07, 2021	8:49AM	Water	B21-My12650	X		X	X	X	X	X	X	X	X	X

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NATA # 1261 Site # 20794

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IANZ # 1290

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 50001

Order No.:
Report #: 793315
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: May 7, 2021 1:00 PM
Due: May 14, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	CANCELLED	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X		X	X			X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794							X		X		X			X	X	
Perth Laboratory - NATA Site # 23736																
Mayfield Laboratory - NATA Site # 25079																
External Laboratory																
21	F BLANK	May 06, 2021	8:44AM	Water	B21-My12651	X		X	X	X	X	X	X	X	X	X
22	DUP 1	May 07, 2021	6:50AM	Water	B21-My12652	X		X	X	X	X	X	X	X	X	X
23	DUP 2	May 07, 2021		Water	B21-My12653	X		X	X	X	X	X	X	X	X	X
24	TRIP	May 07, 2021		Water	B21-My12654	X		X	X	X	X	X	X	X	X	X
Test Counts						22	2	22	22	22	22	22	22	22	22	22

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Chlorophyll a	ug/L	< 5			5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	126			70-130	Pass	
Acenaphthylene	%	91			70-130	Pass	
Anthracene	%	116			70-130	Pass	
Benz(a)anthracene	%	100			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene			%	107			70-130	Pass	
Benzo(b&j)fluoranthene			%	82			70-130	Pass	
Benzo(g,h,i)perylene			%	95			70-130	Pass	
Benzo(k)fluoranthene			%	100			70-130	Pass	
Chrysene			%	127			70-130	Pass	
Dibenz(a,h)anthracene			%	92			70-130	Pass	
Fluoranthene			%	102			70-130	Pass	
Fluorene			%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	109			70-130	Pass	
Naphthalene			%	108			70-130	Pass	
Phenanthrene			%	100			70-130	Pass	
Pyrene			%	102			70-130	Pass	
LCS - % Recovery									
Ammonia (as N)			%	99			70-130	Pass	
Nitrate & Nitrite (as N)			%	102			70-130	Pass	
Nitrate (as N)			%	102			70-130	Pass	
Nitrite (as N)			%	107			70-130	Pass	
Phosphate total (as P)			%	107			70-130	Pass	
Phosphorus reactive (as P)			%	74			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	94			70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	98			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	97			80-120	Pass	
Arsenic (filtered)			%	106			80-120	Pass	
Cadmium			%	98			80-120	Pass	
Cadmium (filtered)			%	96			80-120	Pass	
Chromium			%	101			80-120	Pass	
Chromium (filtered)			%	93			80-120	Pass	
Copper			%	102			80-120	Pass	
Copper (filtered)			%	96			80-120	Pass	
Lead			%	97			80-120	Pass	
Lead (filtered)			%	86			80-120	Pass	
Mercury			%	96			80-120	Pass	
Mercury (filtered)			%	99			80-120	Pass	
Nickel			%	100			80-120	Pass	
Nickel (filtered)			%	101			80-120	Pass	
Zinc			%	95			80-120	Pass	
Zinc (filtered)			%	112			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	B21-My15624	NCP	%	105			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	M21-My19748	NCP	%	98			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B21-My12632	CP	%	97			70-130	Pass	
Nitrate & Nitrite (as N)	B21-My12632	CP	%	89			70-130	Pass	
Nitrate (as N)	B21-My12632	CP	%	89			70-130	Pass	
Nitrite (as N)	B21-My12632	CP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	B21-My12632	CP	%	121			75-125	Pass	
Arsenic (filtered)	B21-My12632	CP	%	112			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	B21-My12632	CP	%	100		75-125	Pass	
Cadmium (filtered)	B21-My12632	CP	%	103		75-125	Pass	
Chromium	B21-My12632	CP	%	89		75-125	Pass	
Chromium (filtered)	B21-My12632	CP	%	101		75-125	Pass	
Copper	B21-My12632	CP	%	123		75-125	Pass	
Lead	B21-My12632	CP	%	78		75-125	Pass	
Lead (filtered)	B21-My12632	CP	%	91		75-125	Pass	
Nickel	B21-My12632	CP	%	93		75-125	Pass	
Nickel (filtered)	B21-My12632	CP	%	103		75-125	Pass	
Zinc	B21-My12632	CP	%	113		75-125	Pass	
Zinc (filtered)	B21-My12632	CP	%	113		75-125	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-My12643	CP	%	98		70-130	Pass	
Nitrate & Nitrite (as N)	B21-My12643	CP	%	100		70-130	Pass	
Nitrate (as N)	B21-My12643	CP	%	100		70-130	Pass	
Nitrite (as N)	B21-My12643	CP	%	107		70-130	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-My12644	CP	%	97		70-130	Pass	
Nitrate & Nitrite (as N)	B21-My12644	CP	%	99		70-130	Pass	
Nitrate (as N)	B21-My12644	CP	%	99		70-130	Pass	
Nitrite (as N)	B21-My12644	CP	%	106		70-130	Pass	
Spike - % Recovery								
				Result 1				
Heavy Metals								
Arsenic	B21-My12644	CP	%	119		75-125	Pass	
Arsenic (filtered)	B21-My12644	CP	%	110		75-125	Pass	
Cadmium	B21-My12644	CP	%	104		75-125	Pass	
Cadmium (filtered)	B21-My12644	CP	%	99		75-125	Pass	
Chromium	B21-My12644	CP	%	82		75-125	Pass	
Chromium (filtered)	B21-My12644	CP	%	95		75-125	Pass	
Copper	B21-My12644	CP	%	113		75-125	Pass	
Lead	B21-My12644	CP	%	77		75-125	Pass	
Lead (filtered)	B21-My12644	CP	%	87		75-125	Pass	
Mercury	B21-My12644	CP	%	95		75-125	Pass	
Nickel	B21-My12644	CP	%	84		75-125	Pass	
Nickel (filtered)	B21-My12644	CP	%	97		75-125	Pass	
Zinc	B21-My12644	CP	%	98		75-125	Pass	
Zinc (filtered)	B21-My12644	CP	%	110		75-125	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-My12653	CP	%	98		70-130	Pass	
Nitrate & Nitrite (as N)	B21-My12653	CP	%	94		70-130	Pass	
Nitrate (as N)	B21-My12653	CP	%	94		70-130	Pass	
Nitrite (as N)	B21-My12653	CP	%	107		70-130	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-My12654	CP	%	103		70-130	Pass	
Nitrate & Nitrite (as N)	B21-My12654	CP	%	95		70-130	Pass	
Nitrate (as N)	B21-My12654	CP	%	95		70-130	Pass	
Nitrite (as N)	B21-My12654	CP	%	103		70-130	Pass	
Spike - % Recovery								
				Result 1				
Heavy Metals								
Arsenic	B21-My12654	CP	%	110		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic (filtered)	B21-My12654	CP	%	111			75-125	Pass	
Cadmium	B21-My12654	CP	%	101			75-125	Pass	
Cadmium (filtered)	B21-My12654	CP	%	101			75-125	Pass	
Chromium	B21-My12654	CP	%	99			75-125	Pass	
Chromium (filtered)	B21-My12654	CP	%	87			75-125	Pass	
Copper	B21-My12654	CP	%	91			75-125	Pass	
Copper (filtered)	B21-My12654	CP	%	118			75-125	Pass	
Lead	B21-My12654	CP	%	97			75-125	Pass	
Lead (filtered)	B21-My12654	CP	%	82			75-125	Pass	
Mercury	B21-My12654	CP	%	96			75-125	Pass	
Mercury (filtered)	B21-My12654	CP	%	81			75-125	Pass	
Nickel	B21-My12654	CP	%	90			75-125	Pass	
Nickel (filtered)	B21-My12654	CP	%	88			75-125	Pass	
Zinc	B21-My12654	CP	%	92			75-125	Pass	
Zinc (filtered)	B21-My12654	CP	%	108			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B21-My12631	CP	mg/L	0.04	0.04	11	30%	Pass	
Conductivity (at 25°C)	B21-My12631	CP	uS/cm	320	320	<1	30%	Pass	
Nitrate & Nitrite (as N)	B21-My12631	CP	mg/L	1.3	1.3	1.0	30%	Pass	
Nitrate (as N)	B21-My12631	CP	mg/L	1.3	1.3	1.0	30%	Pass	
Nitrite (as N)	B21-My12631	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	M21-My15672	NCP	mg/L	4.9	4.8	1.0	30%	Pass	
Total Kjeldahl Nitrogen (as N)	M21-My19747	NCP	mg/L	< 0.2	0.3	49	30%	Fail	Q15
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	B21-My12631	CP	mg/L	0.007	0.006	4.0	30%	Pass	
Chromium (filtered)	B21-My12631	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	B21-My14369	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	B21-My12631	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	B21-My12631	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	B21-My12631	CP	mg/L	0.002	0.003	15	30%	Pass	
Zinc (filtered)	B21-My12631	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	B21-My12632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate				Result 1	Result 2	RPD		
Ammonia (as N)	B21-My12632	CP	mg/L	0.03	0.03	15	30%	Pass
Nitrate & Nitrite (as N)	B21-My12632	CP	mg/L	1.3	1.3	1.0	30%	Pass
Nitrate (as N)	B21-My12632	CP	mg/L	1.3	1.3	1.0	30%	Pass
Nitrite (as N)	B21-My12632	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Turbidity	B21-My12636	CP	NTU	23	23	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Ammonia (as N)	B21-My12643	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Conductivity (at 25°C)	B21-My12643	CP	uS/cm	270	260	<1	30%	Pass
Nitrate & Nitrite (as N)	B21-My12643	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	B21-My12643	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	B21-My12643	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	B21-My12643	CP	mg/L	0.002	0.002	2.0	30%	Pass
Arsenic (filtered)	B21-My12643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	B21-My12643	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	B21-My12643	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	B21-My12643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chromium (filtered)	B21-My12643	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-My12643	CP	mg/L	0.001	0.001	<1	30%	Pass
Mercury	B21-My12643	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Mercury (filtered)	B21-My12643	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-My12643	CP	mg/L	0.002	0.002	14	30%	Pass
Zinc	B21-My12643	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Zinc (filtered)	B21-My12643	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Ammonia (as N)	B21-My12644	CP	mg/L	0.04	0.05	14	30%	Pass
Nitrate & Nitrite (as N)	B21-My12644	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	B21-My12644	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	B21-My12644	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate				Result 1	Result 2	RPD		
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)anthracene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-My12645	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass

Duplicate					Result 1	Result 2	RPD		
Ammonia (as N)	B21-My12649	CP	mg/L		0.03	0.02	23	30%	Pass
Nitrate & Nitrite (as N)	B21-My12649	CP	mg/L		1.5	1.5	<1	30%	Pass
Nitrate (as N)	B21-My12649	CP	mg/L		1.5	1.5	<1	30%	Pass
Nitrite (as N)	B21-My12649	CP	mg/L		< 0.02	< 0.02	<1	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-My12649	CP	mg/L		31	34	9.0	30%	Pass
Duplicate					Result 1	Result 2	RPD		
Polycyclic Aromatic Hydrocarbons					Result 1	Result 2	RPD		
Acenaphthene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-My12650	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Duplicate					Result 1	Result 2	RPD		
Total Suspended Solids Dried at 103–105°C	B21-My12650	CP	mg/L		19	18	3.0	30%	Pass
Duplicate					Result 1	Result 2	RPD		
Ammonia (as N)	B21-My12653	CP	mg/L		0.06	0.05	9.0	30%	Pass
Conductivity (at 25°C)	B21-My12653	CP	uS/cm		840	840	<1	30%	Pass
Nitrate & Nitrite (as N)	B21-My12653	CP	mg/L		1.0	1.0	<1	30%	Pass
Nitrate (as N)	B21-My12653	CP	mg/L		0.99	1.00	<1	30%	Pass
Nitrite (as N)	B21-My12653	CP	mg/L		0.02	0.02	5.0	30%	Pass
Duplicate					Result 1	Result 2	RPD		
Heavy Metals					Result 1	Result 2	RPD		
Arsenic	B21-My12653	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Arsenic (filtered)	B21-My12653	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Chromium	B21-My12653	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Copper	B21-My12653	CP	mg/L		0.004	0.003	7.0	30%	Pass
Copper (filtered)	B21-My12653	CP	mg/L		0.003	0.002	12	30%	Pass
Lead (filtered)	B21-My12653	CP	mg/L		< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	B21-My12653	CP	mg/L		< 0.0001	< 0.0001	<1	30%	Pass
Nickel	B21-My12653	CP	mg/L		0.005	0.004	19	30%	Pass
Nickel (filtered)	B21-My12653	CP	mg/L		0.005	0.004	27	30%	Pass
Zinc	B21-My12653	CP	mg/L		< 0.005	< 0.005	<1	30%	Pass
Zinc (filtered)	B21-My12653	CP	mg/L		< 0.005	< 0.005	<1	30%	Pass
Duplicate					Result 1	Result 2	RPD		
Ammonia (as N)	B21-My12654	CP	mg/L		0.03	0.02	17	30%	Pass
Chlorophyll a	B21-My12654	CP	ug/L		< 5	< 5	<1	30%	Pass
Nitrate & Nitrite (as N)	B21-My12654	CP	mg/L		1.5	1.5	1.0	30%	Pass
Nitrate (as N)	B21-My12654	CP	mg/L		1.5	1.5	1.0	30%	Pass
Nitrite (as N)	B21-My12654	CP	mg/L		< 0.02	< 0.02	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ryan Gilbert	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Aurecon Australia (BRIS) Pty Ltd
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Accreditation Number 1261
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Arrangement for the mutual recognition of the
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inspection and proficiency testing scheme providers
reports.

Attention: James Bone

Report 798866-W
Project name B2G SWQ
Project ID 511481
Received Date May 28, 2021

Client Sample ID			B2GWS01.2	B2GWS01.2R	B2GWS01.3	B2GWS01.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57431	B21-My57432	B21-My57433	B21-My57434
Date Sampled			May 26, 2021	May 26, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	73	76	77	94
p-Terphenyl-d14 (surr.)	1	%	75	50	107	106
Ammonia (as N)	0.01	mg/L	< 0.01	0.02	0.01	0.06
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	320	310	350	470
Nitrate & Nitrite (as N)	0.05	mg/L	0.94	0.98	0.12	0.09
Nitrate (as N)	0.02	mg/L	0.94	0.96	0.11	0.09
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.09	0.07	0.04	0.03
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.03	< 0.01	< 0.01
Salinity (determined from EC)*	20	mg/L	180	190	210	280
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.94	0.98	< 0.2	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	5.0	11	6.4	10
Turbidity	1	NTU	18	16	12	18
Hardness mg equivalent CaCO3/L	5	mg/L	71	67	60	47

Client Sample ID			B2GWS01.2	B2GWS01.2R	B2GWS01.3	B2GWS01.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57431	B21-My57432	B21-My57433	B21-My57434
Date Sampled			May 26, 2021	May 26, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	14	13	12	8.6
Magnesium	0.5	mg/L	8.6	8.2	7.0	6.2
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.004	0.004	0.001	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.002	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2GWS01.7	B2GWS01.11	B2GWS01.16	B2GWS01.18
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57435	B21-My57436	B21-My57437	B21-My57438
Date Sampled			May 26, 2021	May 26, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	51	67	52	68
p-Terphenyl-d14 (surr.)	1	%	74	51	55	113
Ammonia (as N)	0.01	mg/L	0.04	0.11	< 0.01	0.02
Chlorophyll a	5	ug/L	< 5	8.9	5.3	< 5
Conductivity (at 25°C)	10	uS/cm	410	290	180	170
Nitrate & Nitrite (as N)	0.05	mg/L	0.19	< 0.05	< 0.05	0.08
Nitrate (as N)	0.02	mg/L	0.19	< 0.02	< 0.02	0.07
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.06	0.06	0.06	0.06
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Salinity (determined from EC)*	20	mg/L	250	170	110	100
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	0.2	< 0.2

Client Sample ID			B2GWS01.7	B2GWS01.11	B2GWS01.16	B2GWS01.18
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57435	B21-My57436	B21-My57437	B21-My57438
Date Sampled			May 26, 2021	May 26, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	0.2	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	14	9.0	6.6	13
Turbidity	1	NTU	53	63	90	150
Hardness mg equivalent CaCO ₃ /L	5	mg/L	65	49	51	53
Alkali Metals						
Calcium	0.5	mg/L	13	10	13	13
Magnesium	0.5	mg/L	8.0	5.6	4.5	4.9
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	0.002	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.002	0.002	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	0.003	0.002	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2GWS01.20.R	B2GWS01.23	B2GWS01.24	B2GWS01.27
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57439	B21-My57440	B21-My57441	B21-My57442
Date Sampled			May 27, 2021	May 27, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	96	101	72	89
p-Terphenyl-d14 (surr.)	1	%	139	134	111	90
Ammonia (as N)	0.01	mg/L	0.06	0.04	0.02	0.07
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	590	280	200	280
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	0.15	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	0.03	0.14	< 0.02

Client Sample ID			B2GWS01.20.R	B2GWS01.23	B2GWS01.24	B2GWS01.27
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57439	B21-My57440	B21-My57441	B21-My57442
Date Sampled			May 27, 2021	May 27, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03	0.09	0.32	0.17
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	0.08	0.08
Salinity (determined from EC)*	20	mg/L	350	170	120	170
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	12	30	48	31
Turbidity	1	NTU	95	59	250	63
Hardness mg equivalent CaCO ₃ /L	5	mg/L	45	63	44	84
Alkali Metals						
Calcium	0.5	mg/L	9.4	16	9.0	18
Magnesium	0.5	mg/L	5.2	5.8	5.1	9.6
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	0.001	0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.006	0.002	0.003	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.004	0.006	0.004
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2GWS01.29	B2GWS01.30	B2GWS01.32	B2GWS01.33
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57443	B21-My57444	B21-My57445	B21-My57446
Date Sampled			May 27, 2021	May 27, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	98	97	61	111
p-Terphenyl-d14 (surr.)	1	%	76	134	109	82

Client Sample ID			B2GWS01.29	B2GWS01.30	B2GWS01.32	B2GWS01.33
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57443	B21-My57444	B21-My57445	B21-My57446
Date Sampled			May 27, 2021	May 27, 2021	May 27, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.11	0.03	0.02	0.04
Chlorophyll a	5	ug/L	< 5	< 5	5.3	< 5
Conductivity (at 25°C)	10	uS/cm	230	240	300	290
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	0.49	0.34	0.25
Nitrate (as N)	0.02	mg/L	< 0.05	0.47	0.32	0.22
Nitrite (as N)	0.02	mg/L	< 0.05	< 0.02	< 0.02	0.02
Phosphate total (as P)	0.01	mg/L	0.86	0.21	0.18	0.18
Phosphorus reactive (as P)	0.01	mg/L	0.56	0.11	0.10	0.09
Salinity (determined from EC)*	20	mg/L	140	140	180	170
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	0.49	0.34	0.25
Total Suspended Solids Dried at 103–105°C	1	mg/L	15	22	18	22
Turbidity	1	NTU	69	83	43	55
Hardness mg equivalent CaCO3/L	5	mg/L	62	47	77	77
Alkali Metals						
Calcium	0.5	mg/L	11	8.3	15	15
Magnesium	0.5	mg/L	8.0	6.4	9.6	9.3
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.009	0.003	0.003	0.003
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2GWS01.39	B2GWS01.40	B2GWS01.42	FIELD BLANK 1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57447	B21-My57448	B21-My57449	B21-My57450
Date Sampled			May 28, 2021	May 28, 2021	May 28, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			B2GWS01.39	B2GWS01.40	B2GWS01.42	FIELD BLANK 1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My57447	B21-My57448	B21-My57449	B21-My57450
Date Sampled			May 28, 2021	May 28, 2021	May 28, 2021	May 27, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	90	96	62	138
p-Terphenyl-d14 (surr.)	1	%	79	95	75	95
Ammonia (as N)	0.01	mg/L	0.04	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	1500	1200	1100	< 10
Nitrate & Nitrite (as N)	0.05	mg/L	1.5	0.96	1.5	< 0.05
Nitrate (as N)	0.02	mg/L	1.5	0.95	1.5	< 0.02
Nitrite (as N)	0.02	mg/L	0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.05	0.03	0.02	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Salinity (determined from EC)*	20	mg/L	900	720	660	< 20
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	4.0
Total Nitrogen (as N)*	0.2	mg/L	1.5	0.96	1.5	4
Total Suspended Solids Dried at 103–105°C	1	mg/L	45	16	< 1	< 1
Turbidity	1	NTU	45	4.3	< 1	< 1
Hardness mg equivalent CaCO3/L	5	mg/L	440	400	420	< 5
Alkali Metals						
Calcium	0.5	mg/L	60	52	56	< 0.5
Magnesium	0.5	mg/L	70	65	67	< 0.5
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.007	0.002	0.002	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			DUPLICATE 1	DUPLICATE 2
Sample Matrix			Water	Water
Eurofins Sample No.			B21-My57451	B21-My57452
Date Sampled			May 27, 2021	May 28, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			DUPLICATE 1	DUPLICATE 2
Sample Matrix			Water	Water
Eurofins Sample No.			B21-My57451	B21-My57452
Date Sampled			May 27, 2021	May 28, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	132	98
p-Terphenyl-d14 (surr.)	1	%	93	112
Ammonia (as N)	0.01	mg/L	0.02	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	270	1100
Nitrate & Nitrite (as N)	0.05	mg/L	0.48	0.97
Nitrate (as N)	0.02	mg/L	0.48	0.96
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.21	0.03
Phosphorus reactive (as P)	0.01	mg/L	0.18	< 0.01
Salinity (determined from EC)*	20	mg/L	160	660
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.48	0.97
Total Suspended Solids Dried at 103–105°C	1	mg/L	29	8.0
Turbidity	1	NTU	83	4.7
Hardness mg equivalent CaCO3/L	5	mg/L	73	340
Alkali Metals				
Calcium	0.5	mg/L	13	42
Magnesium	0.5	mg/L	9.7	57
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Jun 01, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Jun 07, 2021	2 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Brisbane	May 28, 2021	28 Days
- Method: APHA 2510B			
Salinity (determined from EC)*	Melbourne	Jun 07, 2021	0 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Brisbane	May 28, 2021	7 Days
- Method: APHA 2540 D			
Turbidity	Melbourne	Jun 04, 2021	2 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Metals M8 filtered	Brisbane	May 28, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N)	Melbourne	May 31, 2021	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	May 31, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	May 31, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	May 31, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Melbourne	May 31, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	May 31, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	May 31, 2021	7 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Hardness Set			
Hardness mg equivalent CaCO3/L	Melbourne	May 31, 2021	28 Days
- Method: APHA 2340B Hardness by Calculation			
Alkali Metals	Melbourne	May 31, 2021	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511841

Order No.:
Report #: 798866
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: May 28, 2021 12:00 PM
Due: Jun 4, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2GWS01.2	May 26, 2021		Water	B21-My57431	X	X	X	X	X	X	X	X	X
2	B2GWS01.2R	May 26, 2021		Water	B21-My57432	X	X	X	X	X	X	X	X	X
3	B2GWS01.3	May 27, 2021		Water	B21-My57433	X	X	X	X	X	X	X	X	X
4	B2GWS01.6	May 27, 2021		Water	B21-My57434	X	X	X	X	X	X	X	X	X
5	B2GWS01.7	May 26, 2021		Water	B21-My57435	X	X	X	X	X	X	X	X	X
6	B2GWS01.11	May 26, 2021		Water	B21-My57436	X	X	X	X	X	X	X	X	X
7	B2GWS01.16	May 27, 2021		Water	B21-My57437	X	X	X	X	X	X	X	X	X
8	B2GWS01.18	May 27, 2021		Water	B21-My57438	X	X	X	X	X	X	X	X	X
9	B2GWS01.20.	May 27, 2021		Water	B21-My57439	X	X	X	X	X	X	X	X	X

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Site # 1254 & 14271

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NATA # 1261 Site # 18217

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
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Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

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Company Name: Aurecon Australia (BRIS) Pty Ltd
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Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511841

Order No.:
Report #: 798866
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: May 28, 2021 12:00 PM
Due: Jun 4, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
	R													
10	B2GWS01.23	May 27, 2021		Water	B21-My57440	X	X	X	X	X	X	X	X	X
11	B2GWS01.24	May 27, 2021		Water	B21-My57441	X	X	X	X	X	X	X	X	X
12	B2GWS01.27	May 27, 2021		Water	B21-My57442	X	X	X	X	X	X	X	X	X
13	B2GWS01.29	May 27, 2021		Water	B21-My57443	X	X	X	X	X	X	X	X	X
14	B2GWS01.30	May 27, 2021		Water	B21-My57444	X	X	X	X	X	X	X	X	X
15	B2GWS01.32	May 27, 2021		Water	B21-My57445	X	X	X	X	X	X	X	X	X
16	B2GWS01.33	May 27, 2021		Water	B21-My57446	X	X	X	X	X	X	X	X	X
17	B2GWS01.39	May 28, 2021		Water	B21-My57447	X	X	X	X	X	X	X	X	X
18	B2GWS01.40	May 28, 2021		Water	B21-My57448	X	X	X	X	X	X	X	X	X
19	B2GWS01.42	May 28, 2021		Water	B21-My57449	X	X	X	X	X	X	X	X	X

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6 Monterey Road
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Phone : +61 3 8564 5000
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Order No.:
Report #: 798866
Phone: 07 3173 8000
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Received: May 28, 2021 12:00 PM
Due: Jun 4, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254 & 14271						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
20	FIELD BLANK 1	May 27, 2021		Water	B21-My57450	X	X	X	X	X	X	X	X	X
21	DUPLICATE 1	May 27, 2021		Water	B21-My57451	X	X	X	X	X	X	X	X	X
22	DUPLICATE 2	May 28, 2021		Water	B21-My57452	X	X	X	X	X	X	X	X	X
Test Counts						22	22	22	22	22	22	22	22	22

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	93			70-130	Pass	
Acenaphthylene	%	72			70-130	Pass	
Anthracene	%	74			70-130	Pass	
Benz(a)anthracene	%	89			70-130	Pass	
Benzo(a)pyrene	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	%	100			70-130	Pass	
Benzo(g,h,i)perylene	%	79			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene			%	92			70-130	Pass	
Chrysene			%	73			70-130	Pass	
Dibenz(a,h)anthracene			%	75			70-130	Pass	
Fluoranthene			%	74			70-130	Pass	
Fluorene			%	96			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	80			70-130	Pass	
Naphthalene			%	81			70-130	Pass	
Phenanthrene			%	97			70-130	Pass	
Pyrene			%	73			70-130	Pass	
LCS - % Recovery									
Ammonia (as N)			%	106			70-130	Pass	
Nitrate & Nitrite (as N)			%	102			70-130	Pass	
Nitrate (as N)			%	102			70-130	Pass	
Nitrite (as N)			%	109			70-130	Pass	
Phosphate total (as P)			%	117			70-130	Pass	
Phosphorus reactive (as P)			%	102			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	111			70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	101			70-130	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	106			80-120	Pass	
Magnesium			%	96			80-120	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic (filtered)			%	117			80-120	Pass	
Cadmium (filtered)			%	112			80-120	Pass	
Chromium (filtered)			%	116			80-120	Pass	
Copper (filtered)			%	114			80-120	Pass	
Lead (filtered)			%	117			80-120	Pass	
Mercury (filtered)			%	118			80-120	Pass	
Nickel (filtered)			%	111			80-120	Pass	
Zinc (filtered)			%	110			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	B21-My57955	NCP	%	120			75-125	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B21-My57432	CP	%	97			70-130	Pass	
Nitrate & Nitrite (as N)	B21-My57432	CP	%	93			70-130	Pass	
Nitrate (as N)	B21-My57432	CP	%	93			70-130	Pass	
Nitrite (as N)	B21-My57432	CP	%	109			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium (filtered)	B21-My57432	CP	%	120			75-125	Pass	
Chromium (filtered)	B21-My57432	CP	%	120			75-125	Pass	
Copper (filtered)	B21-My57432	CP	%	115			75-125	Pass	
Lead (filtered)	B21-My57432	CP	%	113			75-125	Pass	
Mercury (filtered)	B21-My57432	CP	%	120			75-125	Pass	
Nickel (filtered)	B21-My57432	CP	%	113			75-125	Pass	
Zinc (filtered)	B21-My57432	CP	%	118			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	B21-Mv57433	CP	%	106			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Magnesium	B21-My57433	CP	%	97			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Copper (filtered)	B21-My57442	CP	%	122			75-125	Pass	
Lead (filtered)	B21-My57442	CP	%	120			75-125	Pass	
Nickel (filtered)	B21-My57442	CP	%	120			75-125	Pass	
Zinc (filtered)	B21-My57442	CP	%	125			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B21-My57443	CP	%	85			70-130	Pass	
Acenaphthylene	B21-My57443	CP	%	84			70-130	Pass	
Anthracene	B21-My57443	CP	%	71			70-130	Pass	
Benz(a)anthracene	B21-My57443	CP	%	81			70-130	Pass	
Benzo(a)pyrene	B21-My57443	CP	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	B21-My57443	CP	%	76			70-130	Pass	
Benzo(g,h,i)perylene	B21-My57443	CP	%	71			70-130	Pass	
Benzo(k)fluoranthene	B21-My57443	CP	%	76			70-130	Pass	
Chrysene	B21-My57443	CP	%	96			70-130	Pass	
Dibenz(a,h)anthracene	B21-My57443	CP	%	77			70-130	Pass	
Fluoranthene	B21-My57443	CP	%	96			70-130	Pass	
Fluorene	B21-My57443	CP	%	79			70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-My57443	CP	%	81			70-130	Pass	
Naphthalene	B21-My57443	CP	%	80			70-130	Pass	
Phenanthrene	B21-My57443	CP	%	128			70-130	Pass	
Pyrene	B21-My57443	CP	%	105			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	B21-My57443	CP	%	71			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	B21-My57443	CP	%	112			75-125	Pass	
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	B21-My57451	CP	%	123			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	B21-My57452	CP	%	72			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Cadmium (filtered)	B21-My57452	CP	%	117			75-125	Pass	
Chromium (filtered)	B21-My57452	CP	%	117			75-125	Pass	
Copper (filtered)	B21-My57452	CP	%	111			75-125	Pass	
Lead (filtered)	B21-My57452	CP	%	112			75-125	Pass	
Mercury (filtered)	B21-My57452	CP	%	117			75-125	Pass	
Nickel (filtered)	B21-My57452	CP	%	108			75-125	Pass	
Zinc (filtered)	B21-My57452	CP	%	112			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B21-My61732	NCP	ug/L	< 5	< 5	<1	30%	Pass	
Conductivity (at 25°C)	B21-My57431	CP	uS/cm	320	320	1.3	30%	Pass	
Phosphate total (as P)	M21-My60670	NCP	mg/L	0.02	0.02	1.0	30%	Pass	
Turbidity	B21-My57431	CP	NTU	18	17	2.0	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-My57431	CP	mg/L	0.004	0.004	1.0	30%	Pass
Chromium (filtered)	B21-My57431	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-My57431	CP	mg/L	0.001	0.001	<1	30%	Pass
Lead (filtered)	B21-My57431	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	B21-My55278	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-My57431	CP	mg/L	0.002	0.002	<1	30%	Pass
Zinc (filtered)	B21-My57431	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-My57432	CP	mg/L	0.02	0.03	34	30%	Fail
Nitrate & Nitrite (as N)	B21-My57432	CP	mg/L	0.98	1.0	3.0	30%	Pass
Nitrate (as N)	B21-My57432	CP	mg/L	0.96	0.99	3.0	30%	Pass
Nitrite (as N)	B21-My57432	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	B21-My57433	CP	mg/L	12	14	10	30%	Pass
Magnesium	B21-My57433	CP	mg/L	7.0	7.5	7.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Kjeldahl Nitrogen (as N)	B21-My57436	CP	mg/L	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Turbidity	B21-My57438	CP	NTU	150	150	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-My57441	CP	uS/cm	200	200	<1	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-My57441	CP	mg/L	48	52	8.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-My57441	CP	mg/L	0.001	0.001	2.0	30%	Pass
Cadmium (filtered)	B21-My57441	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	B21-My57441	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-My57441	CP	mg/L	0.003	0.003	1.0	30%	Pass
Lead (filtered)	B21-My57441	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Nickel (filtered)	B21-My57441	CP	mg/L	0.006	0.006	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-My57442	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass

Duplicate								
				Result 1	Result 2	RPD		
Total Kjeldahl Nitrogen (as N)	B21-My57442	CP	mg/L	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-My57451	CP	uS/cm	270	270	1.1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-My57451	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chromium (filtered)	B21-My57451	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-My57451	CP	mg/L	0.002	0.002	3.0	30%	Pass
Nickel (filtered)	B21-My57451	CP	mg/L	0.003	0.003	3.0	30%	Pass
Zinc (filtered)	B21-My57451	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-My57452	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Suspended Solids Dried at 103–105°C	B21-My57452	CP	mg/L	8.0	14	57	30%	Fail

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Alana Wadsworth	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Aurecon Australia (BRIS) Pty Ltd
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Accreditation Number 1261
Site Number 20794

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 reference materials producers reports and certificates.

Attention: **James Bone**

Report **805487-W**
Project name **B2G SWQ**
Project ID **511481**
Received Date **Jun 24, 2021**

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Jn48684	B21-Jn48685	B21-Jn48686	B21-Jn48687
Date Sampled			Jun 22, 2021	Jun 22, 2021	Jun 23, 2021	Jun 23, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	117	89	117	78
p-Terphenyl-d14 (surr.)	1	%	134	89	126	78
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	6.2	19	< 5
Conductivity (at 25°C)	10	uS/cm	210	220	420	260
Nitrate & Nitrite (as N)	0.05	mg/L	0.15	0.14	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.15	0.14	< 0.02	0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.13	0.12	0.03	0.04
Phosphorus reactive (as P)	0.01	mg/L	0.06	0.07	< 0.01	< 0.01
Salinity (determined from EC)*	20	mg/L	130	110	200	160
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.4	1.3	1.7	1.2
Total Nitrogen (as N)*	0.2	mg/L	1.55	1.44	1.7	1.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	38	39	32	39
Turbidity	1	NTU	55	49	11	16
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	42	100	62	41

Client Sample ID			B2G 1.2 Water B21-Jn48684 Jun 22, 2021	B2G 1.2R Water B21-Jn48685 Jun 22, 2021	B2G 1.3 Water B21-Jn48686 Jun 23, 2021	B2G 1.6 Water B21-Jn48687 Jun 23, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.002	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.003	0.002	0.001	0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.003	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.7 Water B21-Jn48688 Jun 22, 2021	B2G 1.11 Water B21-Jn48689 Jun 23, 2021	B2G 1.16 Water B21-Jn48690 Jun 23, 2021	B2G 1.18 Water B21-Jn48691 Jun 23, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	83	58	67	96
p-Terphenyl-d14 (surr.)	1	%	105	54	71	90
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	8.9	5.3	8.9
Conductivity (at 25°C)	10	uS/cm	240	250	170	170
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.02	< 0.02	< 0.02	0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.04	0.06	0.05	0.05
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	0.01	< 0.01	0.01
Salinity (determined from EC)*	20	mg/L	140	120	85	84
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.8	2.8	0.8	1.4
Total Nitrogen (as N)*	0.2	mg/L	0.8	2.8	0.8	1.4
Total Suspended Solids Dried at 103–105°C	1	mg/L	36	48	37	36
Turbidity	1	NTU	14	200	62	140
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	38	36	45	36

Client Sample ID			B2G 1.7 Water B21-Jn48688 Jun 22, 2021	B2G 1.11 Water B21-Jn48689 Jun 23, 2021	B2G 1.16 Water B21-Jn48690 Jun 23, 2021	B2G 1.18 Water B21-Jn48691 Jun 23, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.002	0.002	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.002	0.002	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	0.011	< 0.005	< 0.005

Client Sample ID			B2G 1.23 Water B21-Jn48692 Jun 23, 2021	B2G 1.24 Water B21-Jn48693 Jun 23, 2021	B2G 1.27 Water B21-Jn48694 Jun 23, 2021	B2G 1.30 Water B21-Jn48696 Jun 23, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	69	86	52	111
p-Terphenyl-d14 (surr.)	1	%	117	83	134	107
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.03	< 0.01
Chlorophyll a	5	ug/L	91	< 5	12	6.2
Conductivity (at 25°C)	10	uS/cm	290	190	330	330
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	0.08	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	0.08	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.15	0.29	0.08	0.07
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	0.03	0.03	0.03
Salinity (determined from EC)*	20	mg/L	140	93	160	200
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.0	< 0.2	1.2	1.2
Total Nitrogen (as N)*	0.2	mg/L	1	< 0.2	1.2	1.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	55	100	32	35
Turbidity	1	NTU	36	260	11	9.5
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	49	31	72	75

Client Sample ID			B2G 1.23	B2G 1.24	B2G 1.27	B2G 1.30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Jn48692	B21-Jn48693	B21-Jn48694	B21-Jn48696
Date Sampled			Jun 23, 2021	Jun 23, 2021	Jun 23, 2021	Jun 23, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.003	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.005	0.002	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	0.012	< 0.005	< 0.005

Client Sample ID			B2G 1.32	B2G 1.33	B2G 1.39	B2G 1.40
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Jn48697	B21-Jn48698	B21-Jn48699	B21-Jn48700
Date Sampled			Jun 23, 2021	Jun 23, 2021	Jun 24, 2021	Jun 24, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	67	57	100	73
p-Terphenyl-d14 (surr.)	1	%	53	78	69	93
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	5.3	< 5
Conductivity (at 25°C)	10	uS/cm	340	330	1500	1200
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	0.21	0.43
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	0.21	0.43
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.09	0.09	0.05	0.05
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.03	< 0.01	0.02
Salinity (determined from EC)*	20	mg/L	200	200	900	580
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	1.4	1.9	1.5	1.2
Total Nitrogen (as N)*	0.2	mg/L	1.4	1.9	1.71	1.63
Total Suspended Solids Dried at 103–105°C	1	mg/L	28	28	42	35
Turbidity	1	NTU	13	4.1	11	< 1
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	44	140	230	190

Client Sample ID			B2G 1.32	B2G 1.33	B2G 1.39	B2G 1.40
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Jn48697	B21-Jn48698	B21-Jn48699	B21-Jn48700
Date Sampled			Jun 23, 2021	Jun 23, 2021	Jun 24, 2021	Jun 24, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.003	0.005	0.001
Zinc (filtered)	0.005	mg/L	0.015	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.42	FIELD BLANK	DUP 1	DUP 2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Jn48701	B21-Jn48702	B21-Jn48703	B21-Jn48704
Date Sampled			Jun 24, 2021	Jun 22, 2021	Jun 23, 2021	Jun 24, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	56	71	56	81
p-Terphenyl-d14 (surr.)	1	%	57	70	58	112
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	1200	11	250	1200
Nitrate & Nitrite (as N)	0.05	mg/L	0.50	< 0.05	< 0.05	0.48
Nitrate (as N)	0.02	mg/L	0.49	< 0.02	< 0.02	0.48
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03	< 0.01	0.05	0.02
Phosphorus reactive (as P)	0.01	mg/L	0.01	< 0.01	< 0.01	0.01
Salinity (determined from EC)*	20	mg/L	720	< 20	< 20	580
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	4.2	0.8	0.7	1.9
Total Nitrogen (as N)*	0.2	mg/L	4.7	0.8	0.7	2.38
Total Suspended Solids Dried at 103–105°C	1	mg/L	25	< 1	47	4.6
Turbidity	1	NTU	1.2	< 1	210	1.3
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	210	< 15	18	210

Client Sample ID			B2G 1.42	FIELD BLANK	DUP 1	DUP 2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Jn48701	B21-Jn48702	B21-Jn48703	B21-Jn48704
Date Sampled			Jun 24, 2021	Jun 22, 2021	Jun 23, 2021	Jun 24, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	0.008	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	< 0.001	0.002	0.001
Zinc (filtered)	0.005	mg/L	0.007	< 0.005	< 0.005	0.009

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Jun 25, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Jun 25, 2021	2 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Melbourne	Jun 25, 2021	28 Days
- Method: LTM-INO-4030 Conductivity			
Salinity (determined from EC)*	Melbourne	Jul 05, 2021	0 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Melbourne	Jun 25, 2021	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Turbidity	Melbourne	Jun 30, 2021	2 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Calcium Hardness mg equivalent CaCO ₃ /L	Melbourne	Jun 25, 2021	28 Days
- Method: APHA 2340B Hardness by Calculation			
Metals M8 filtered	Melbourne	Jun 25, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N)	Melbourne	Jun 25, 2021	28 Days
- Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Jun 25, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrate (as N)	Melbourne	Jun 25, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrite (as N)	Melbourne	Jun 25, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Phosphate total (as P)	Melbourne	Jun 25, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Jun 25, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jun 25, 2021	7 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 805487
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Jun 24, 2021 12:30 PM
Due: Jul 1, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	CANCELLED	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217															
Brisbane Laboratory - NATA Site # 20794							X								
Perth Laboratory - NATA Site # 23736															
Mayfield Laboratory - NATA Site # 25079															
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	B2G 1.2	Jun 22, 2021	3:30PM	Water	B21-Jn48684	X		X	X	X	X	X	X	X	X
2	B2G 1.2R	Jun 22, 2021	4:17PM	Water	B21-Jn48685	X		X	X	X	X	X	X	X	X
3	B2G 1.3	Jun 23, 2021	8:50AM	Water	B21-Jn48686	X		X	X	X	X	X	X	X	X
4	B2G 1.6	Jun 23, 2021	7:45AM	Water	B21-Jn48687	X		X	X	X	X	X	X	X	X
5	B2G 1.7	Jun 22, 2021	12:30PM	Water	B21-Jn48688	X		X	X	X	X	X	X	X	X
6	B2G 1.11	Jun 23, 2021	10:00AM	Water	B21-Jn48689	X		X	X	X	X	X	X	X	X
7	B2G 1.16	Jun 23, 2021	11:40AM	Water	B21-Jn48690	X		X	X	X	X	X	X	X	X
8	B2G 1.18	Jun 23, 2021	12:10AM	Water	B21-Jn48691	X		X	X	X	X	X	X	X	X
9	B2G 1.23	Jun 23, 2021	1:15PM	Water	B21-Jn48692	X		X	X	X	X	X	X	X	X

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Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
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QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 805487
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Jun 24, 2021 12:30 PM
Due: Jul 1, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	CANCELLED	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217															
Brisbane Laboratory - NATA Site # 20794							X								
Perth Laboratory - NATA Site # 23736															
Mayfield Laboratory - NATA Site # 25079															
External Laboratory															
10	B2G 1.24	Jun 23, 2021	3:55PM	Water	B21-Jn48693	X		X	X	X	X	X	X	X	X
11	B2G 1.27	Jun 23, 2021	2:15PM	Water	B21-Jn48694	X		X	X	X	X	X	X	X	X
12	B2G 1.29	Jun 23, 2021	2:45PM	Water	B21-Jn48695		X								
13	B2G 1.30	Jun 23, 2021	3:10PM	Water	B21-Jn48696	X		X	X	X	X	X	X	X	X
14	B2G 1.32	Jun 23, 2021	3:35PM	Water	B21-Jn48697	X		X	X	X	X	X	X	X	X
15	B2G 1.33	Jun 23, 2021	3:50PM	Water	B21-Jn48698	X		X	X	X	X	X	X	X	X
16	B2G 1.39	Jun 24, 2021	7:16AM	Water	B21-Jn48699	X		X	X	X	X	X	X	X	X
17	B2G 1.40	Jun 24, 2021	7:45AM	Water	B21-Jn48700	X		X	X	X	X	X	X	X	X
18	B2G 1.42	Jun 24, 2021	8:20AM	Water	B21-Jn48701	X		X	X	X	X	X	X	X	X
19	FIELD BLANK	Jun 22, 2021		Water	B21-Jn48702	X		X	X	X	X	X	X	X	X
20	DUP 1	Jun 23, 2021		Water	B21-Jn48703	X		X	X	X	X	X	X	X	X

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Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
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QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 805487
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Jun 24, 2021 12:30 PM
Due: Jul 1, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	CANCELLED	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X		X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217															
Brisbane Laboratory - NATA Site # 20794							X								
Perth Laboratory - NATA Site # 23736															
Mayfield Laboratory - NATA Site # 25079															
External Laboratory															
21	DUP 2	Jun 24, 2021		Water	B21-Jn48704	X		X	X	X	X	X	X	X	X
Test Counts						20	1	20	20	20	20	20	20	20	20

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	118			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	
Anthracene	%	102			70-130	Pass	
Benz(a)anthracene	%	101			70-130	Pass	
Benzo(a)pyrene	%	118			70-130	Pass	
Benzo(b&j)fluoranthene	%	74			70-130	Pass	
Benzo(g,h,i)perylene	%	88			70-130	Pass	
Benzo(k)fluoranthene	%	83			70-130	Pass	
Chrysene	%	124			70-130	Pass	
Dibenz(a,h)anthracene	%	84			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene				%	112			70-130	Pass	
Indeno(1.2.3-cd)pyrene				%	76			70-130	Pass	
Naphthalene				%	120			70-130	Pass	
Phenanthrene				%	95			70-130	Pass	
Pyrene				%	120			70-130	Pass	
LCS - % Recovery										
Ammonia (as N)				%	97			70-130	Pass	
Conductivity (at 25°C)				%	92			70-130	Pass	
Nitrate & Nitrite (as N)				%	101			70-130	Pass	
Nitrate (as N)				%	101			70-130	Pass	
Nitrite (as N)				%	108			70-130	Pass	
Phosphate total (as P)				%	85			70-130	Pass	
Phosphorus reactive (as P)				%	113			70-130	Pass	
Total Kjeldahl Nitrogen (as N)				%	108			70-130	Pass	
Total Suspended Solids Dried at 103–105°C				%	93			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
				Result 1						
Ammonia (as N)	M21-Jn14014	NCP	%	96				70-130	Pass	
Nitrate & Nitrite (as N)	M21-Jn14014	NCP	%	77				70-130	Pass	
Nitrate (as N)	M21-Jn14014	NCP	%	77				70-130	Pass	
Nitrite (as N)	M21-Jn14014	NCP	%	107				70-130	Pass	
Total Suspended Solids Dried at 103–105°C	B21-Jn48856	NCP	%	112				70-130	Pass	
Spike - % Recovery										
Heavy Metals				Result 1						
Arsenic (filtered)	B21-Jn48684	CP	%	93				75-125	Pass	
Cadmium (filtered)	B21-Jn48684	CP	%	97				75-125	Pass	
Chromium (filtered)	B21-Jn48684	CP	%	97				75-125	Pass	
Copper (filtered)	B21-Jn48684	CP	%	99				75-125	Pass	
Lead (filtered)	B21-Jn48684	CP	%	99				75-125	Pass	
Mercury (filtered)	B21-Jn48684	CP	%	107				75-125	Pass	
Nickel (filtered)	B21-Jn48684	CP	%	98				75-125	Pass	
Zinc (filtered)	B21-Jn48684	CP	%	99				75-125	Pass	
Spike - % Recovery										
				Result 1						
Phosphate total (as P)	P21-Jn44854	NCP	%	119				70-130	Pass	
Spike - % Recovery										
				Result 1						
Total Kjeldahl Nitrogen (as N)	B21-Jn48691	CP	%	74				70-130	Pass	
Spike - % Recovery										
Heavy Metals				Result 1						
Arsenic (filtered)	B21-Jn48694	CP	%	100				75-125	Pass	
Cadmium (filtered)	B21-Jn48694	CP	%	98				75-125	Pass	
Chromium (filtered)	B21-Jn48694	CP	%	97				75-125	Pass	
Copper (filtered)	B21-Jn48694	CP	%	99				75-125	Pass	
Lead (filtered)	B21-Jn48694	CP	%	98				75-125	Pass	
Mercury (filtered)	B21-Jn48694	CP	%	98				75-125	Pass	
Nickel (filtered)	B21-Jn48694	CP	%	97				75-125	Pass	
Zinc (filtered)	B21-Jn48694	CP	%	99				75-125	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons				Result 1						
Acenaphthene	B21-Jn48700	CP	%	121				70-130	Pass	
Acenaphthylene	B21-Jn48700	CP	%	83				70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	B21-Jn48700	CP	%	77			70-130	Pass	
Benz(a)anthracene	B21-Jn48700	CP	%	98			70-130	Pass	
Benzo(a)pyrene	B21-Jn48700	CP	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	B21-Jn48700	CP	%	114			70-130	Pass	
Benzo(g,h,i)perylene	B21-Jn48700	CP	%	94			70-130	Pass	
Benzo(k)fluoranthene	B21-Jn48700	CP	%	103			70-130	Pass	
Chrysene	B21-Jn48700	CP	%	115			70-130	Pass	
Dibenz(a,h)anthracene	B21-Jn48700	CP	%	84			70-130	Pass	
Fluoranthene	B21-Jn48700	CP	%	111			70-130	Pass	
Fluorene	B21-Jn48700	CP	%	114			70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-Jn48700	CP	%	83			70-130	Pass	
Naphthalene	B21-Jn48700	CP	%	123			70-130	Pass	
Phenanthrene	B21-Jn48700	CP	%	105			70-130	Pass	
Pyrene	B21-Jn48700	CP	%	115			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B21-Jn48684	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Conductivity (at 25°C)	M21-Jn55699	NCP	uS/cm	7000	7300	5.0	30%	Pass	
Nitrate & Nitrite (as N)	B21-Jn48684	CP	mg/L	0.15	0.15	4.0	30%	Pass	
Nitrate (as N)	B21-Jn48684	CP	mg/L	0.15	0.15	4.0	30%	Pass	
Nitrite (as N)	B21-Jn48684	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Turbidity	B21-Jn48684	CP	NTU	55	52	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Heavy Metals									
Arsenic (filtered)	B21-Jn48684	CP	mg/L	0.002	0.002	6.0	30%	Pass	
Cadmium (filtered)	B21-Jn48684	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	B21-Jn48684	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B21-Jn48684	CP	mg/L	0.003	0.002	9.0	30%	Pass	
Lead (filtered)	B21-Jn48684	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	B21-Jn48684	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	B21-Jn48684	CP	mg/L	0.003	0.003	3.0	30%	Pass	
Zinc (filtered)	B21-Jn48684	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Salinity (determined from EC)*	N21-Jn48033	NCP	mg/L	5500	5500	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphate total (as P)	B21-Jn48693	CP	mg/L	0.29	0.30	2.0	30%	Pass	
Total Suspended Solids Dried at 103–105°C	B21-Jn48693	CP	mg/L	100	93	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Heavy Metals									
Arsenic (filtered)	B21-Jn48694	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	B21-Jn48694	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	B21-Jn48694	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B21-Jn48694	CP	mg/L	0.002	0.002	16	30%	Pass	
Lead (filtered)	B21-Jn48694	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	B21-Jn48694	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	B21-Jn48694	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Zinc (filtered)	B21-Jn48694	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-Jn48699	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Alana Wadsworth	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Aurecon Australia (BRIS) Pty Ltd
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Attention: James Bone

Report 812787-W
Project name B2G SWQ
Project ID 511481
Received Date Jul 23, 2021

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-JI46200	M21-JI46201	M21-JI46202	M21-JI46203
Date Sampled			Jul 21, 2021	Jul 21, 2021	Jul 22, 2021	Jul 22, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	68	73	113	107
p-Terphenyl-d14 (surr.)	1	%	87	80	80	139
Ammonia (as N)	0.01	mg/L	0.02	0.02	< 0.01	0.02
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	180	180	200	230
Nitrate & Nitrite (as N)	0.05	mg/L	0.28	0.28	0.41	0.36
Nitrate (as N)	0.02	mg/L	0.27	0.27	0.40	0.35
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.12	0.14	0.09	0.08
Phosphorus reactive (as P)	0.01	mg/L	0.05	0.06	0.03	0.03
Salinity (determined from EC)*	20	mg/L	110	110	120	140
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.3	< 0.2	0.8	0.9
Total Nitrogen (as N)*	0.2	mg/L	0.58	0.28	1.21	1.26
Total Suspended Solids Dried at 103–105°C	1	mg/L	12	34	9.1	17
Turbidity	1	NTU	48	82	35	30
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	64	22	20	22

Client Sample ID			B2G 1.2 Water M21-JI46200 Jul 21, 2021	B2G 1.2R Water M21-JI46201 Jul 21, 2021	B2G 1.3 Water M21-JI46202 Jul 22, 2021	B2G 1.6 Water M21-JI46203 Jul 22, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.002	0.001	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.003	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.002	0.002	0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.005	< 0.005

Client Sample ID			B2G 1.7 Water M21-JI46204 Jul 21, 2021	B2G 1.16 Water M21-JI46205 Jul 22, 2021	B2G 1.18 Water M21-JI46206 Jul 22, 2021	B2G 1.23 Water M21-JI46207 Jul 22, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	93	63	99	83
p-Terphenyl-d14 (surr.)	1	%	124	136	120	87
Ammonia (as N)	0.01	mg/L	< 0.01	0.07	0.06	0.04
Chlorophyll a	5	ug/L	< 5	< 10	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	210	190	190	220
Nitrate & Nitrite (as N)	0.05	mg/L	0.40	1.5	0.95	2.1
Nitrate (as N)	0.02	mg/L	0.39	1.4	0.92	2.0
Nitrite (as N)	0.02	mg/L	< 0.02	0.04	0.03	0.04
Phosphate total (as P)	0.01	mg/L	0.08	0.31	0.25	0.23
Phosphorus reactive (as P)	0.01	mg/L	0.03	0.14	0.14	0.13
Salinity (determined from EC)*	20	mg/L	130	110	110	130
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.9	1.3	1.8	0.7
Total Nitrogen (as N)*	0.2	mg/L	1.3	2.8	2.75	2.8
Total Suspended Solids Dried at 103–105°C	1	mg/L	7.1	25	18	19
Turbidity	1	NTU	35	150	140	130
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	21	23	23	26

Client Sample ID			B2G 1.7 Water M21-JI46204 Jul 21, 2021	B2G 1.16 Water M21-JI46205 Jul 22, 2021	B2G 1.18 Water M21-JI46206 Jul 22, 2021	B2G 1.23 Water M21-JI46207 Jul 22, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.002	0.002	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.001	0.001	0.003
Zinc (filtered)	0.005	mg/L	< 0.005	0.006	0.034	0.020

Client Sample ID			B2G 1.24 Water M21-JI46208 Jul 22, 2021	B2G 1.27 Water M21-JI46209 Jul 22, 2021	B2G 1.30 Water M21-JI46210 Jul 22, 2021	B2G 1.32 Water M21-JI46211 Jul 22, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	97	103	76	76
p-Terphenyl-d14 (surr.)	1	%	126	82	124	82
Ammonia (as N)	0.01	mg/L	0.04	0.02	0.02	0.02
Chlorophyll a	5	ug/L	< 5	< 10	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	160	290	280	290
Nitrate & Nitrite (as N)	0.05	mg/L	0.28	0.48	0.48	0.48
Nitrate (as N)	0.02	mg/L	0.25	0.47	0.46	0.47
Nitrite (as N)	0.02	mg/L	0.03	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.23	0.29	0.28	0.29
Phosphorus reactive (as P)	0.01	mg/L	0.06	0.12	0.12	0.13
Salinity (determined from EC)*	20	mg/L	96	170	170	170
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.8	0.9	0.9	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	1.08	1.38	1.38	0.48
Total Suspended Solids Dried at 103–105°C	1	mg/L	39	42	23	13
Turbidity	1	NTU	130	84	65	56
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	15	31	35	37

Client Sample ID			B2G 1.24	B2G 1.27	B2G 1.30	B2G 1.32
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-JI46208	M21-JI46209	M21-JI46210	M21-JI46211
Date Sampled			Jul 22, 2021	Jul 22, 2021	Jul 22, 2021	Jul 22, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.002	0.002	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.33	B2G 1.39	B2G 1.40	B2G 1.92
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-JI46212	M21-JI46213	M21-JI46214	M21-JI46215
Date Sampled			Jul 22, 2021	Jul 23, 2021	Jul 23, 2021	Jul 23, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	0.006	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	0.005	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	0.005	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	0.005	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	0.008	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	0.010	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	0.003	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	0.003	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	0.010	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	0.058	< 0.001
2-Fluorobiphenyl (surr.)	1	%	80	104	89	101
p-Terphenyl-d14 (surr.)	1	%	67	120	126	120
Ammonia (as N)	0.01	mg/L	0.02	0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	240	1700	1400	1400
Nitrate & Nitrite (as N)	0.05	mg/L	0.50	1.7	2.4	2.7
Nitrate (as N)	0.02	mg/L	0.49	1.7	2.4	2.7
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.30	0.06	0.05	0.04
Phosphorus reactive (as P)	0.01	mg/L	0.12	0.03	0.03	0.03
Salinity (determined from EC)*	20	mg/L	140	1000	840	840
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.5	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	1	1.7	2.4	2.7
Total Suspended Solids Dried at 103–105°C	1	mg/L	27	4.8	4.8	3.0
Turbidity	1	NTU	67	3.4	4.0	2.3
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	33	150	100	170

Client Sample ID			B2G 1.33	B2G 1.39	B2G 1.40	B2G 1.92
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-JI46212	M21-JI46213	M21-JI46214	M21-JI46215
Date Sampled			Jul 22, 2021	Jul 23, 2021	Jul 23, 2021	Jul 23, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.005	< 0.001	0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.008	0.005

Client Sample ID			DUP_1	DUP_2	TRIP_1	FIELD BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-JI46216	M21-JI46217	M21-JI46218	M21-JI46219
Date Sampled			Jul 21, 2021	Jul 23, 2021	Jul 23, 2021	Jul 21, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	83	100	103	87
p-Terphenyl-d14 (surr.)	1	%	111	128	99	91
Ammonia (as N)	0.01	mg/L	0.02	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	180	1400	1400	< 10
Nitrate & Nitrite (as N)	0.05	mg/L	0.28	2.7	2.7	< 0.05
Nitrate (as N)	0.02	mg/L	0.27	2.7	2.7	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.12	0.04	0.04	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	0.06	0.03	0.03	< 0.01
Salinity (determined from EC)*	20	mg/L	110	840	840	< 20
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.4	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.68	2.7	2.7	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	17	1.3	3.0	< 1
Turbidity	1	NTU	49	< 1	1.2	1.3
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	22	170	180	16

Client Sample ID			DUP_1	DUP_2	TRIP_1	FIELD BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M21-JI46216	M21-JI46217	M21-JI46218	M21-JI46219
Date Sampled			Jul 21, 2021	Jul 23, 2021	Jul 23, 2021	Jul 21, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.001	0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Jul 27, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Jul 27, 2021	2 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Melbourne	Jul 27, 2021	28 Days
- Method: LTM-INO-4030 Conductivity			
Salinity (determined from EC)*	Melbourne	Jul 30, 2021	0 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Melbourne	Jul 27, 2021	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Turbidity	Melbourne	Jul 27, 2021	2 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Calcium Hardness mg equivalent CaCO ₃ /L	Melbourne	Jul 27, 2021	28 Days
- Method: APHA 2340B Hardness by Calculation			
Metals M8 filtered	Melbourne	Jul 27, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N)	Melbourne	Jul 27, 2021	28 Days
- Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Jul 27, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrate (as N)	Melbourne	Jul 27, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrite (as N)	Melbourne	Jul 27, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Phosphate total (as P)	Melbourne	Jul 27, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Jul 27, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Jul 27, 2021	7 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

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Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 812787
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Jul 23, 2021 11:35 AM
Due: Jul 30, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G 1.2	Jul 21, 2021	2:50PM	Water	M21-JI46200	X	X	X	X	X	X	X	X	X
2	B2G 1.2R	Jul 21, 2021	3:40PM	Water	M21-JI46201	X	X	X	X	X	X	X	X	X
3	B2G 1.3	Jul 22, 2021	8:45AM	Water	M21-JI46202	X	X	X	X	X	X	X	X	X
4	B2G 1.6	Jul 22, 2021	8:00AM	Water	M21-JI46203	X	X	X	X	X	X	X	X	X
5	B2G 1.7	Jul 21, 2021	12:20PM	Water	M21-JI46204	X	X	X	X	X	X	X	X	X
6	B2G 1.16	Jul 22, 2021	10:30AM	Water	M21-JI46205	X	X	X	X	X	X	X	X	X
7	B2G 1.18	Jul 22, 2021	11:10AM	Water	M21-JI46206	X	X	X	X	X	X	X	X	X
8	B2G 1.23	Jul 22, 2021	12:50PM	Water	M21-JI46207	X	X	X	X	X	X	X	X	X
9	B2G 1.24	Jul 22, 2021	1:30PM	Water	M21-JI46208	X	X	X	X	X	X	X	X	X

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Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
10	B2G 1.27	Jul 22, 2021	2:10PM	Water	M21-JI46209	X	X	X	X	X	X	X	X	X
11	B2G 1.30	Jul 22, 2021	3:10PM	Water	M21-JI46210	X	X	X	X	X	X	X	X	X
12	B2G 1.32	Jul 22, 2021	3:45PM	Water	M21-JI46211	X	X	X	X	X	X	X	X	X
13	B2G 1.33	Jul 22, 2021	4:15PM	Water	M21-JI46212	X	X	X	X	X	X	X	X	X
14	B2G 1.39	Jul 23, 2021	7:15AM	Water	M21-JI46213	X	X	X	X	X	X	X	X	X
15	B2G 1.40	Jul 23, 2021	7:45AM	Water	M21-JI46214	X	X	X	X	X	X	X	X	X
16	B2G 1.92	Jul 23, 2021	8:15AM	Water	M21-JI46215	X	X	X	X	X	X	X	X	X
17	DUP_1	Jul 21, 2021		Water	M21-JI46216	X	X	X	X	X	X	X	X	X
18	DUP_2	Jul 23, 2021		Water	M21-JI46217	X	X	X	X	X	X	X	X	X
19	TRIP_1	Jul 23, 2021		Water	M21-JI46218	X	X	X	X	X	X	X	X	X
20	FIELD BLANK	Jul 21, 2021		Water	M21-JI46219	X	X	X	X	X	X	X	X	X

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Received: Jul 23, 2021 11:35 AM
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Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P								
	Metals M8 filtered	Polyyclic Aromatic Hydrocarbons	Turbidity	Total Suspended Solids Dried at 103-105°C	Salinity (determined from EC)*	Conductivity (at 25°C)	Chlorophyll a	Calcium Hardness mg equivalent CaCO3/L	
Melbourne Laboratory - NATA Site # 1254	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217									
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Mayfield Laboratory - NATA Site # 25079									
External Laboratory									
Test Counts	20	20	20	20	20	20	20	20	20

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	mg/L	< 0.001		0.001	Pass	
Acenaphthylene	mg/L	< 0.001		0.001	Pass	
Anthracene	mg/L	< 0.001		0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001		0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001		0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001		0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001		0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001		0.001	Pass	
Chrysene	mg/L	< 0.001		0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001		0.001	Pass	
Fluoranthene	mg/L	< 0.001		0.001	Pass	
Fluorene	mg/L	< 0.001		0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001		0.001	Pass	
Naphthalene	mg/L	< 0.001		0.001	Pass	
Phenanthrene	mg/L	< 0.001		0.001	Pass	
Pyrene	mg/L	< 0.001		0.001	Pass	
Method Blank						
Ammonia (as N)	mg/L	< 0.01		0.01	Pass	
Chlorophyll a	ug/L	< 5		5	Pass	
Conductivity (at 25°C)	uS/cm	< 10		10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05		0.05	Pass	
Nitrate (as N)	mg/L	< 0.02		0.02	Pass	
Nitrite (as N)	mg/L	< 0.02		0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01		0.01	Pass	
Phosphorus reactive (as P)	mg/L	0.01		0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2		0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1		1	Pass	
Turbidity	NTU	< 1		1	Pass	
Method Blank						
Heavy Metals						
Arsenic (filtered)	mg/L	< 0.001		0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002		0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001		0.001	Pass	
Copper (filtered)	mg/L	< 0.001		0.001	Pass	
Lead (filtered)	mg/L	< 0.001		0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001		0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001		0.001	Pass	
Zinc (filtered)	mg/L	< 0.005		0.005	Pass	
LCS - % Recovery						
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	%	111		70-130	Pass	
Acenaphthylene	%	85		70-130	Pass	
Anthracene	%	73		70-130	Pass	
Benz(a)anthracene	%	84		70-130	Pass	
Benzo(a)pyrene	%	76		70-130	Pass	
Benzo(b&j)fluoranthene	%	109		70-130	Pass	
Benzo(g,h,i)perylene	%	124		70-130	Pass	
Benzo(k)fluoranthene	%	86		70-130	Pass	
Chrysene	%	98		70-130	Pass	
Dibenz(a,h)anthracene	%	81		70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene				%	110			70-130	Pass	
Fluorene				%	117			70-130	Pass	
Indeno(1.2.3-cd)pyrene				%	79			70-130	Pass	
Naphthalene				%	115			70-130	Pass	
Phenanthrene				%	78			70-130	Pass	
Pyrene				%	122			70-130	Pass	
LCS - % Recovery										
Ammonia (as N)				%	96			70-130	Pass	
Conductivity (at 25°C)				%	98			70-130	Pass	
Nitrate & Nitrite (as N)				%	100			70-130	Pass	
Nitrate (as N)				%	99			70-130	Pass	
Nitrite (as N)				%	102			70-130	Pass	
Phosphate total (as P)				%	114			70-130	Pass	
Phosphorus reactive (as P)				%	116			70-130	Pass	
Total Kjeldahl Nitrogen (as N)				%	92			70-130	Pass	
Total Suspended Solids Dried at 103–105°C				%	87			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
					Result 1					
Total Suspended Solids Dried at 103–105°C	M21-JI41573	NCP	%	76				70-130	Pass	
Spike - % Recovery										
Heavy Metals					Result 1					
Arsenic (filtered)	M21-JI46200	CP	%	93				75-125	Pass	
Cadmium (filtered)	M21-JI46200	CP	%	94				75-125	Pass	
Chromium (filtered)	M21-JI46200	CP	%	93				75-125	Pass	
Copper (filtered)	M21-JI46200	CP	%	92				75-125	Pass	
Lead (filtered)	M21-JI46200	CP	%	102				75-125	Pass	
Mercury (filtered)	M21-JI46200	CP	%	101				75-125	Pass	
Nickel (filtered)	M21-JI46200	CP	%	92				75-125	Pass	
Zinc (filtered)	M21-JI46200	CP	%	94				75-125	Pass	
Spike - % Recovery										
					Result 1					
Total Kjeldahl Nitrogen (as N)	M21-JI46201	CP	%	91				70-130	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthylene	B21-JI52464	NCP	%	100				70-130	Pass	
Spike - % Recovery										
Heavy Metals					Result 1					
Arsenic (filtered)	M21-JI46210	CP	%	92				75-125	Pass	
Cadmium (filtered)	M21-JI46210	CP	%	94				75-125	Pass	
Chromium (filtered)	M21-JI46210	CP	%	92				75-125	Pass	
Copper (filtered)	M21-JI46210	CP	%	92				75-125	Pass	
Lead (filtered)	M21-JI46210	CP	%	99				75-125	Pass	
Mercury (filtered)	M21-JI46210	CP	%	92				75-125	Pass	
Nickel (filtered)	M21-JI46210	CP	%	91				75-125	Pass	
Zinc (filtered)	M21-JI46210	CP	%	91				75-125	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene	M21-JI46217	CP	%	95				70-130	Pass	
Anthracene	M21-JI46217	CP	%	75				70-130	Pass	
Benz(a)anthracene	M21-JI46217	CP	%	77				70-130	Pass	
Benzo(a)pyrene	M21-JI46217	CP	%	108				70-130	Pass	
Benzo(b&i)fluoranthene	M21-JI46217	CP	%	98				70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g,h,i)perylene	M21-JI46217	CP	%	95			70-130	Pass	
Benzo(k)fluoranthene	M21-JI46217	CP	%	87			70-130	Pass	
Chrysene	M21-JI46217	CP	%	108			70-130	Pass	
Dibenz(a,h)anthracene	M21-JI46217	CP	%	72			70-130	Pass	
Fluoranthene	M21-JI46217	CP	%	110			70-130	Pass	
Fluorene	M21-JI46217	CP	%	107			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M21-JI46217	CP	%	90			70-130	Pass	
Naphthalene	M21-JI46217	CP	%	102			70-130	Pass	
Phenanthrene	M21-JI46217	CP	%	79			70-130	Pass	
Pyrene	M21-JI46217	CP	%	117			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M21-JI46219	CP	%	92			70-130	Pass	
Nitrate & Nitrite (as N)	M21-JI46219	CP	%	97			70-130	Pass	
Nitrate (as N)	M21-JI46219	CP	%	97			70-130	Pass	
Nitrite (as N)	M21-JI46219	CP	%	94			70-130	Pass	
Phosphate total (as P)	M21-JI46219	CP	%	117			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M21-JI42403	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	M21-JI46200	CP	uS/cm	180	180	1.0	30%	Pass	
Turbidity	M21-JI46200	CP	NTU	48	51	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M21-JI46200	CP	mg/L	0.002	0.002	<1	30%	Pass	
Chromium (filtered)	M21-JI46200	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M21-JI46200	CP	mg/L	0.002	0.002	<1	30%	Pass	
Lead (filtered)	M21-JI46200	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	M21-JI46200	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M21-JI46200	CP	mg/L	0.002	0.002	<1	30%	Pass	
Zinc (filtered)	M21-JI46200	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	M21-JI46209	CP	ug/L	< 10	< 10	<1	30%	Pass	
Conductivity (at 25°C)	M21-JI46209	CP	uS/cm	290	280	1.0	30%	Pass	
Phosphate total (as P)	M21-JI46209	CP	mg/L	0.29	0.31	4.0	30%	Pass	

Duplicate								
				Result 1	Result 2	RPD		
Total Suspended Solids Dried at 103–105°C	M21-JI46210	CP	mg/L	23	30	27	30%	Pass
Turbidity	M21-JI46210	CP	NTU	65	64	3.0	30%	Pass
Calcium Hardness mg equivalent CaCO ₃ /L	M21-JI46210	CP	mg/L	35	32	9.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	M21-JI46210	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	M21-JI46210	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	M21-JI46210	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	M21-JI46210	CP	mg/L	0.002	0.002	<1	30%	Pass
Lead (filtered)	M21-JI46210	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	M21-JI46210	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	M21-JI46210	CP	mg/L	0.002	0.002	<1	30%	Pass
Zinc (filtered)	M21-JI46210	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	M21-JI46219	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Nitrate & Nitrite (as N)	M21-JI46219	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	M21-JI46219	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	M21-JI46219	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Alana Wadsworth	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Attention: **James Bone**

Report **819812-W**
Project name **B2G SWQ**
Project ID **511481**
Received Date **Aug 26, 2021**

Client Sample ID			B2G 1.27	B2G 1.30	B2G 1.32	B2G 1.33
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49086	B21-Au49087	B21-Au49088	B21-Au49089
Date Sampled			Aug 25, 2021	Aug 25, 2021	Aug 25, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	63	124	105	76
p-Terphenyl-d14 (surr.)	1	%	82	117	87	133
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	370	370	370	350
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.08	0.07	0.11	0.14
Phosphorus reactive (as P)	0.01	mg/L	0.04	0.04	0.07	0.08
Salinity (determined from EC)*	20	mg/L	180	170	160	150
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	27	31	48	28
Turbidity	1	NTU	6.0	4.4	12	15
Hardness mg equivalent CaCO3/L	5	mg/L	67	61	71	55
Nitrogens (speciated)						
Ammonia (as N)	0.01	mg/L	0.08	< 0.01	< 0.01	< 0.01

Client Sample ID			B2G 1.27	B2G 1.30	B2G 1.32	B2G 1.33
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49086	B21-Au49087	B21-Au49088	B21-Au49089
Date Sampled			Aug 25, 2021	Aug 25, 2021	Aug 25, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	13	11	14	10
Magnesium	0.5	mg/L	8.6	8.0	8.6	7.1
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	0.004	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.002	0.004	0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.39	B2G 1.40	B2G 1.42	FIELD BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49090	B21-Au49091	B21-Au49092	B21-Au49093
Date Sampled			Aug 26, 2021	Aug 26, 2021	Aug 26, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	80	87	122	124
p-Terphenyl-d14 (surr.)	1	%	142	112	79	77
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	2000	1000	1200	1700
Nitrate & Nitrite (as N)	0.05	mg/L	0.87	2.0	2.5	< 0.05
Nitrate (as N)	0.02	mg/L	0.87	1.9	2.5	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03	0.04	0.06	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	0.04	0.03	< 0.01
Salinity (determined from EC)*	20	mg/L	970	470	550	< 20
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.87	2	2.5	< 0.2

Client Sample ID			B2G 1.39	B2G 1.40	B2G 1.42	FIELD BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49090	B21-Au49091	B21-Au49092	B21-Au49093
Date Sampled			Aug 26, 2021	Aug 26, 2021	Aug 26, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Total Suspended Solids Dried at 103–105°C	1	mg/L	69	26	21	5.0
Turbidity	1	NTU	5.3	3.3	1.7	< 1
Hardness mg equivalent CaCO ₃ /L	5	mg/L	560	330	410	< 5
Nitrogens (speciated)						
Ammonia (as N)	0.01	mg/L	0.01	0.04	0.02	< 0.01
Alkali Metals						
Calcium	0.5	mg/L	65	56	57	< 0.5
Magnesium	0.5	mg/L	96	46	64	< 0.5
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.003	0.002	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	0.002	0.002	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.009	< 0.005

Client Sample ID			DUP_1	DUP_2	B2G 1.2	B2G 1.2R
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49094	B21-Au49095	B21-Au49096	B21-Au49097
Date Sampled			Aug 24, 2021	Aug 26, 2021	Aug 24, 2021	Aug 24, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	135	99	76	82
p-Terphenyl-d14 (surr.)	1	%	117	98	76	89
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	320	2000	240	240
Nitrate & Nitrite (as N)	0.05	mg/L	0.45	0.87	0.51	0.51
Nitrate (as N)	0.02	mg/L	0.45	0.87	0.51	0.51

Client Sample ID			DUP_1	DUP_2	B2G 1.2	B2G 1.2R
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49094	B21-Au49095	B21-Au49096	B21-Au49097
Date Sampled			Aug 24, 2021	Aug 26, 2021	Aug 24, 2021	Aug 24, 2021
Test/Reference	LOR	Unit				
Nitrite (as N)						
	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)						
	0.01	mg/L	0.07	0.03	0.09	0.09
Phosphorus reactive (as P)						
	0.01	mg/L	< 0.01	< 0.01	0.04	0.04
Salinity (determined from EC)*						
	20	mg/L	140	940	120	110
Total Kjeldahl Nitrogen (as N)						
	0.2	mg/L	0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*						
	0.2	mg/L	0.65	0.87	0.51	0.51
Total Suspended Solids Dried at 103–105°C						
	1	mg/L	38	12	37	32
Turbidity						
	1	NTU	14	51	15	15
Hardness mg equivalent CaCO3/L						
	5	mg/L	53	560	56	60
Nitrogens (speciated)						
Ammonia (as N)						
	0.01	mg/L	0.04	< 0.01	0.01	0.02
Alkali Metals						
Calcium						
	0.5	mg/L	9.9	67	8.2	12
Magnesium						
	0.5	mg/L	7.0	95	8.7	7.5
Heavy Metals						
Arsenic (filtered)						
	0.001	mg/L	0.001	< 0.001	0.003	0.003
Cadmium (filtered)						
	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)						
	0.001	mg/L	0.002	0.002	0.002	0.002
Lead (filtered)						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)						
	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)						
	0.001	mg/L	0.001	0.005	0.002	0.002
Zinc (filtered)						
	0.005	mg/L	< 0.005	< 0.005	< 0.005	0.006

Client Sample ID			B2G 1.3	B2G 1.6	B2G 1.7	B2G 1.11
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49098	B21-Au49099	B21-Au49100	B21-Au49101
Date Sampled			Aug 25, 2021	Aug 25, 2021	Aug 24, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene^{N07}						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*						
	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)						
	1	%	103	85	94	82
p-Terphenyl-d14 (surr.)						
	1	%	123	106	50	84

Client Sample ID			B2G 1.3	B2G 1.6	B2G 1.7	B2G 1.11
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49098	B21-Au49099	B21-Au49100	B21-Au49101
Date Sampled			Aug 25, 2021	Aug 25, 2021	Aug 24, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	310	310	320	280
Nitrate & Nitrite (as N)	0.05	mg/L	0.35	0.37	0.41	< 0.05
Nitrate (as N)	0.02	mg/L	0.35	0.37	0.41	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.06	0.07	0.07	0.05
Phosphorus reactive (as P)	0.01	mg/L	0.01	0.02	0.02	< 0.01
Salinity (determined from EC)*	20	mg/L	140	150	140	120
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.35	0.37	0.41	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	42	52	46	25
Turbidity	1	NTU	15	18	15	40
Hardness mg equivalent CaCO3/L	5	mg/L	62	49	52	47
Nitrogens (speciated)						
Ammonia (as N)	0.01	mg/L	< 0.01	0.07	0.04	< 0.01
Alkali Metals						
Calcium	0.5	mg/L	13	9.3	10	9.4
Magnesium	0.5	mg/L	7.1	6.3	6.4	5.7
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	0.001	0.001	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.001	0.002	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.001	0.001	0.001	0.003
Zinc (filtered)	0.005	mg/L	< 0.005	0.005	< 0.005	0.006

Client Sample ID			B2G 1.16	B2G 1.18	B2G 1.23	B2G 1.24
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49102	B21-Au49103	B21-Au49104	B21-Au49105
Date Sampled			Aug 25, 2021	Aug 25, 2021	Aug 25, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			B2G 1.16	B2G 1.18	B2G 1.23	B2G 1.24
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Au49102	B21-Au49103	B21-Au49104	B21-Au49105
Date Sampled			Aug 25, 2021	Aug 25, 2021	Aug 25, 2021	Aug 25, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	53	82	95	144
p-Terphenyl-d14 (surr.)	1	%	55	76	136	130
Chlorophyll a	5	ug/L	< 5	< 5	6.0	< 5
Conductivity (at 25°C)	10	uS/cm	200	170	210	160
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	0.69	0.30	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	0.69	0.30	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.07	0.21	0.10	0.18
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.10	0.03	0.04
Salinity (determined from EC)*	20	mg/L	88	79	96	74
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	0.2	< 0.2	0.5
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	0.89	0.3	0.5
Total Suspended Solids Dried at 103–105°C	1	mg/L	37	19	61	190
Turbidity	1	NTU	110	140	130	160
Hardness mg equivalent CaCO3/L	5	mg/L	50	47	52	43
Nitrogens (speciated)						
Ammonia (as N)	0.01	mg/L	< 0.01	0.02	0.01	0.05
Alkali Metals						
Calcium	0.5	mg/L	12	12	12	8.5
Magnesium	0.5	mg/L	4.7	4.4	5.1	5.3
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.003	0.003	0.003	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.002	0.003	0.005
Zinc (filtered)	0.005	mg/L	< 0.005	0.010	0.007	< 0.005

Client Sample ID			TRIP_1
Sample Matrix			Water
Eurofins Sample No.			B21-Au49106
Date Sampled			Aug 26, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001

Client Sample ID			TRIP_1
Sample Matrix			Water
Eurofins Sample No.			B21-Au49106
Date Sampled			Aug 26, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	95
p-Terphenyl-d14 (surr.)	1	%	148
Chlorophyll a	5	ug/L	< 5
Conductivity (at 25°C)	10	uS/cm	2000
Nitrate & Nitrite (as N)	0.05	mg/L	0.80
Nitrate (as N)	0.02	mg/L	0.80
Nitrite (as N)	0.02	mg/L	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03
Phosphorus reactive (as P)	0.01	mg/L	< 0.01
Salinity (determined from EC)*	20	mg/L	950
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.6
Total Nitrogen (as N)*	0.2	mg/L	1.4
Total Suspended Solids Dried at 103–105°C	1	mg/L	58
Turbidity	1	NTU	5.9
Hardness mg equivalent CaCO3/L	5	mg/L	440
Nitrogens (speciated)			
Ammonia (as N)	0.01	mg/L	< 0.01
Alkali Metals			
Calcium	0.5	mg/L	38
Magnesium	0.5	mg/L	84
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	0.002
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.004
Zinc (filtered)	0.005	mg/L	0.015

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Aug 30, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Sep 02, 2021	28 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Brisbane	Aug 30, 2021	28 Days
- Method: APHA 2510B			
Salinity (determined from EC)*	Melbourne	Aug 30, 2021	0 Days
- Method: LTM-INO-4030			
Total Suspended Solids Dried at 103–105°C	Brisbane	Aug 30, 2021	7 Days
- Method: APHA 2540 D			
Turbidity	Melbourne	Aug 31, 2021	28 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Metals M8 filtered	Brisbane	Aug 30, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Nitrate & Nitrite (as N)	Melbourne	Aug 30, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Aug 30, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Aug 30, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Phosphate total (as P)	Melbourne	Aug 30, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Aug 30, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Aug 30, 2021	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Nitrogens (speciated)			
Ammonia (as N)	Melbourne	Aug 30, 2021	28 Days
- Method:			
Hardness Set			
Hardness mg equivalent CaCO3/L	Melbourne	Aug 30, 2021	28 Days
- Method: APHA 2340B Hardness by Calculation			
Alkali Metals	Melbourne	Aug 30, 2021	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
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Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 819812
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Fax: +61 7 3173 8001

Received: Aug 26, 2021 11:10 AM
Due: Sep 2, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G 1.27	Aug 25, 2021	2:00PM	Water	B21-Au49086	X	X	X	X	X	X	X	X	X
2	B2G 1.30	Aug 25, 2021	2:45PM	Water	B21-Au49087	X	X	X	X	X	X	X	X	X
3	B2G 1.32	Aug 25, 2021	3:15PM	Water	B21-Au49088	X	X	X	X	X	X	X	X	X
4	B2G 1.33	Aug 25, 2021	3:40PM	Water	B21-Au49089	X	X	X	X	X	X	X	X	X
5	B2G 1.39	Aug 26, 2021	6:50AM	Water	B21-Au49090	X	X	X	X	X	X	X	X	X
6	B2G 1.40	Aug 26, 2021	7:30AM	Water	B21-Au49091	X	X	X	X	X	X	X	X	X
7	B2G 1.42	Aug 26, 2021	8:05AM	Water	B21-Au49092	X	X	X	X	X	X	X	X	X
8	FIELD BLANK	Aug 25, 2021		Water	B21-Au49093	X	X	X	X	X	X	X	X	X
9	DUP_1	Aug 24, 2021		Water	B21-Au49094	X	X	X	X	X	X	X	X	X

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NATA # 1261 Site # 23736

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Company Name: Aurecon Australia (BRIS) Pty Ltd
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Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 819812
Phone: 07 3173 8000
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Received: Aug 26, 2021 11:10 AM
Due: Sep 2, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
10	DUP_2	Aug 26, 2021		Water	B21-Au49095	X	X	X	X	X	X	X	X	X
11	B2G 1.2	Aug 24, 2021	3:50PM	Water	B21-Au49096	X	X	X	X	X	X	X	X	X
12	B2G 1.2R	Aug 24, 2021	4:25PM	Water	B21-Au49097	X	X	X	X	X	X	X	X	X
13	B2G 1.3	Aug 25, 2021	8:30AM	Water	B21-Au49098	X	X	X	X	X	X	X	X	X
14	B2G 1.6	Aug 25, 2021	7:45AM	Water	B21-Au49099	X	X	X	X	X	X	X	X	X
15	B2G 1.7	Aug 24, 2021	12:45PM	Water	B21-Au49100	X	X	X	X	X	X	X	X	X
16	B2G 1.11	Aug 25, 2021	9:20AM	Water	B21-Au49101	X	X	X	X	X	X	X	X	X
17	B2G 1.16	Aug 25, 2021	10:55AM	Water	B21-Au49102	X	X	X	X	X	X	X	X	X
18	B2G 1.18	Aug 25, 2021	11:25AM	Water	B21-Au49103	X	X	X	X	X	X	X	X	X
19	B2G 1.23	Aug 25, 2021	12:35PM	Water	B21-Au49104	X	X	X	X	X	X	X	X	X
20	B2G 1.24	Aug 25, 2021	1:25PM	Water	B21-Au49105	X	X	X	X	X	X	X	X	X

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QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
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Due: Sep 2, 2021
Priority: 5 Day
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Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (determined from EC)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA Site # 1254						X		X		X	X		X	X
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794							X		X			X		
Perth Laboratory - NATA Site # 23736														
Mayfield Laboratory - NATA Site # 25079														
External Laboratory														
21	TRIP_1	Aug 26, 2021		Water	B21-Au49106	X	X	X	X	X	X	X	X	X
Test Counts						21	21	21	21	21	21	21	21	21

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NC	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Chlorophyll a	ug/L	< 5			5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Nitrogens (speciated)							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	109			70-130	Pass	
Acenaphthylene	%	77			70-130	Pass	
Anthracene	%	87			70-130	Pass	
Benz(a)anthracene	%	77			70-130	Pass	
Benzo(a)pyrene	%	83			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g,h,i)perylene			%	103			70-130	Pass	
Benzo(k)fluoranthene			%	108			70-130	Pass	
Chrysene			%	119			70-130	Pass	
Dibenz(a,h)anthracene			%	87			70-130	Pass	
Fluoranthene			%	122			70-130	Pass	
Fluorene			%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	79			70-130	Pass	
Naphthalene			%	122			70-130	Pass	
Phenanthrene			%	104			70-130	Pass	
Pyrene			%	120			70-130	Pass	
LCS - % Recovery									
Nitrate & Nitrite (as N)			%	112			70-130	Pass	
Nitrate (as N)			%	112			70-130	Pass	
Nitrite (as N)			%	109			70-130	Pass	
Phosphate total (as P)			%	107			70-130	Pass	
Phosphorus reactive (as P)			%	116			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	81			70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	98			70-130	Pass	
LCS - % Recovery									
Nitrogens (speciated)									
Ammonia (as N)			%	108			70-130	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	93			80-120	Pass	
Magnesium			%	91			80-120	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic (filtered)			%	87			80-120	Pass	
Cadmium (filtered)			%	87			80-120	Pass	
Chromium (filtered)			%	83			80-120	Pass	
Copper (filtered)			%	83			80-120	Pass	
Lead (filtered)			%	84			80-120	Pass	
Mercury (filtered)			%	90			80-120	Pass	
Nickel (filtered)			%	90			80-120	Pass	
Zinc (filtered)			%	81			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	P21-Au52066	NCP	%	79			70-130	Pass	
Spike - % Recovery									
				Result 1					
Calcium	B21-Au49086	CP	%	95			75-125	Pass	
Magnesium	B21-Au49086	CP	%	88			75-125	Pass	
Spike - % Recovery									
				Result 1					
Arsenic (filtered)	B21-Au49087	CP	%	93			75-125	Pass	
Cadmium (filtered)	B21-Au49087	CP	%	91			75-125	Pass	
Chromium (filtered)	B21-Au49087	CP	%	97			75-125	Pass	
Copper (filtered)	B21-Au49087	CP	%	98			75-125	Pass	
Lead (filtered)	B21-Au49087	CP	%	95			75-125	Pass	
Mercury (filtered)	B21-Au49087	CP	%	96			75-125	Pass	
Nickel (filtered)	B21-Au49087	CP	%	93			75-125	Pass	
Zinc (filtered)	B21-Au49087	CP	%	97			75-125	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1				
Arsenic (filtered)	B21-Au49089	CP	%	104		75-125	Pass	
Cadmium (filtered)	B21-Au49089	CP	%	104		75-125	Pass	
Chromium (filtered)	B21-Au49089	CP	%	103		75-125	Pass	
Copper (filtered)	B21-Au49089	CP	%	103		75-125	Pass	
Lead (filtered)	B21-Au49089	CP	%	99		75-125	Pass	
Mercury (filtered)	B21-Au49089	CP	%	98		75-125	Pass	
Nickel (filtered)	B21-Au49089	CP	%	104		75-125	Pass	
Zinc (filtered)	B21-Au49089	CP	%	107		75-125	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	B21-Au37957	NCP	%	113		70-130	Pass	
Acenaphthylene	B21-Au37957	NCP	%	93		70-130	Pass	
Benz(a)anthracene	B21-Au37957	NCP	%	111		70-130	Pass	
Benzo(a)pyrene	S21-Au44384	NCP	%	87		70-130	Pass	
Benzo(b&j)fluoranthene	B21-Au37957	NCP	%	118		70-130	Pass	
Benzo(g,h,i)perylene	B21-Au37957	NCP	%	73		70-130	Pass	
Benzo(k)fluoranthene	B21-Au37957	NCP	%	111		70-130	Pass	
Chrysene	B21-Au37957	NCP	%	111		70-130	Pass	
Dibenz(a,h)anthracene	B21-Au37957	NCP	%	100		70-130	Pass	
Fluoranthene	B21-Au37957	NCP	%	115		70-130	Pass	
Fluorene	B21-Au37957	NCP	%	123		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-Au37957	NCP	%	97		70-130	Pass	
Naphthalene	B21-Au37957	NCP	%	113		70-130	Pass	
Phenanthrene	B21-Au37957	NCP	%	117		70-130	Pass	
Pyrene	B21-Au37957	NCP	%	116		70-130	Pass	
Spike - % Recovery								
Alkali Metals				Result 1				
Calcium	B21-Au49096	CP	%	121		75-125	Pass	
Magnesium	B21-Au49096	CP	%	110		75-125	Pass	
Spike - % Recovery								
				Result 1				
Nitrate & Nitrite (as N)	B21-Au49098	CP	%	95		70-130	Pass	
Nitrate (as N)	B21-Au49098	CP	%	95		70-130	Pass	
Nitrite (as N)	B21-Au49098	CP	%	100		70-130	Pass	
Spike - % Recovery								
Nitrogens (speciated)				Result 1				
Ammonia (as N)	B21-Au49098	CP	%	97		70-130	Pass	
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic (filtered)	B21-Au49099	CP	%	104		75-125	Pass	
Cadmium (filtered)	B21-Au49099	CP	%	106		75-125	Pass	
Chromium (filtered)	B21-Au49099	CP	%	105		75-125	Pass	
Copper (filtered)	B21-Au49099	CP	%	106		75-125	Pass	
Lead (filtered)	B21-Au49099	CP	%	103		75-125	Pass	
Mercury (filtered)	B21-Au49099	CP	%	103		75-125	Pass	
Nickel (filtered)	B21-Au49099	CP	%	106		75-125	Pass	
Zinc (filtered)	B21-Au49099	CP	%	109		75-125	Pass	
Spike - % Recovery								
Alkali Metals				Result 1				
Calcium	B21-Au49106	CP	%	91		75-125	Pass	
Magnesium	B21-Au49106	CP	%	92		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	B21-Au49086	CP	mg/L	13	17	29	30%	Pass	
Magnesium	B21-Au49086	CP	mg/L	8.6	10	15	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	B21-Au49086	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	B21-Au49086	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	B21-Au49086	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B21-Au49086	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Lead (filtered)	B21-Au49086	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	B21-Au49086	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	B21-Au49086	CP	mg/L	0.002	0.002	2.0	30%	Pass	
Zinc (filtered)	B21-Au49086	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	B21-Au49088	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chromium (filtered)	B21-Au49088	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B21-Au49088	CP	mg/L	0.004	0.004	<1	30%	Pass	
Lead (filtered)	B21-Au49088	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	B21-Au49088	CP	mg/L	0.004	0.004	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphate total (as P)	B21-Au49090	CP	mg/L	0.03	0.03	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	B21-Au49092	CP	uS/cm	1200	1200	<1	30%	Pass	
Total Suspended Solids Dried at 103–105°C	B21-Au49092	CP	mg/L	21	25	21	30%	Pass	
Turbidity	B21-Au49092	CP	NTU	1.7	1.7	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate & Nitrite (as N)	B21-Au49093	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrate (as N)	B21-Au49093	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Nitrite (as N)	B21-Au49093	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Nitrogens (speciated)				Result 1	Result 2	RPD			
Ammonia (as N)	B21-Au49093	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Acenaphthylene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Anthracene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B21-Au37956	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Chrysene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Fluoranthene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Fluorene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Naphthalene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Phenanthrene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	
Pyrene	B21-Au37956	NCP	mg/L	< 0.0001	< 0.001	<1	30%	Pass	

Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	B21-Au49096	CP	mg/L	8.2	9.0	10	30%	Pass
Magnesium	B21-Au49096	CP	mg/L	8.7	7.4	16	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Nitrate & Nitrite (as N)	B21-Au49098	CP	mg/L	0.35	0.33	6.0	30%	Pass
Nitrate (as N)	B21-Au49098	CP	mg/L	0.35	0.33	6.0	30%	Pass
Nitrite (as N)	B21-Au49098	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate								
Nitrogens (speciated)				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Au49098	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-Au49098	CP	mg/L	0.001	0.001	4.0	30%	Pass
Cadmium (filtered)	B21-Au49098	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	B21-Au49098	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-Au49098	CP	mg/L	0.002	0.002	4.0	30%	Pass
Lead (filtered)	B21-Au49098	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	B21-Au49098	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-Au49098	CP	mg/L	0.001	0.001	1.0	30%	Pass
Zinc (filtered)	B21-Au49098	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Phosphate total (as P)	B21-Au49100	CP	mg/L	0.07	0.07	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-Au49102	CP	uS/cm	200	200	<1	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-Au49102	CP	mg/L	37	39	5.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chlorophyll a	B21-Au49106	CP	ug/L	< 5	< 5	<1	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	B21-Au49106	CP	mg/L	38	51	29	30%	Pass
Magnesium	B21-Au49106	CP	mg/L	84	98	16	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

Alana Wadsworth	Analytical Services Manager
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Aurecon Australia (BRIS) Pty Ltd
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Attention: **James Bone**

Report **826889-W**
Project name **B2G SWQ**
Project ID **511481**
Received Date **Sep 23, 2021**

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47719	B21-Se47720	B21-Se47721	B21-Se47722
Date Sampled			Sep 21, 2021	Sep 21, 2021	Sep 22, 2021	Sep 22, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	94	76	130	80
p-Terphenyl-d14 (surr.)	1	%	114	105	86	118
Ammonia (as N)	0.01	mg/L	0.02	0.02	0.05	0.07
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	270	260	310	410
Nitrate & Nitrite (as N)	0.05	mg/L	0.12	0.12	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.12	0.12	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.05	0.05	0.04	0.03
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.02	< 0.01	< 0.01
Salinity (expressed as TDS)*	10	mg/L	160	160	190	250
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.7	0.3	1.4	1.5
Total Nitrogen (as N)*	0.2	mg/L	0.82	0.42	1.4	1.5
Total Suspended Solids Dried at 103–105°C	1	mg/L	14	12	21	22
Turbidity	1	NTU	9.1	5.4	4.2	10
Hardness mg equivalent CaCO3/L	5	mg/L	36	69	63	52

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47719	B21-Se47720	B21-Se47721	B21-Se47722
Date Sampled			Sep 21, 2021	Sep 21, 2021	Sep 22, 2021	Sep 22, 2021
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	6.0	11	12	9.5
Magnesium	0.5	mg/L	5.2	9.9	8.2	6.9
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.002	0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.001	0.001	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.002	0.001	< 0.001
Zinc (filtered)	0.005	mg/L	0.005	< 0.005	< 0.005	0.007

Client Sample ID			B2G 1.7	B2G 1.11	B2G 1.16	B2G 1.18
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47723	B21-Se47724	B21-Se47725	B21-Se47726
Date Sampled			Sep 22, 2021	Sep 22, 2021	Sep 22, 2021	Sep 22, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	116	123	139	89
p-Terphenyl-d14 (surr.)	1	%	90	135	134	109
Ammonia (as N)	0.01	mg/L	0.03	0.02	0.04	0.06
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	370	270	210	160
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	0.07	0.40
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	0.07	0.39
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03	0.04	0.09	0.14
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	0.03	0.05
Salinity (expressed as TDS)*	10	mg/L	220	160	130	100
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.3	0.6	1.5	1.3

Client Sample ID			B2G 1.7	B2G 1.11	B2G 1.16	B2G 1.18
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47723	B21-Se47724	B21-Se47725	B21-Se47726
Date Sampled			Sep 22, 2021	Sep 22, 2021	Sep 22, 2021	Sep 22, 2021
Test/Reference	LOR	Unit				
Total Nitrogen (as N)*	0.2	mg/L	0.3	0.6	1.57	1.7
Total Suspended Solids Dried at 103–105°C	1	mg/L	17	23	27	31
Turbidity	1	NTU	2.0	20	100	170
Hardness mg equivalent CaCO ₃ /L	5	mg/L	39	52	56	51
Alkali Metals						
Calcium	0.5	mg/L	6.9	9.6	12	11
Magnesium	0.5	mg/L	5.2	6.9	6.4	5.5
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	0.002	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.002	0.003	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.002	0.003	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.23	B2G 1.24	B2G 1.27	B2G 1.3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47727	B21-Se47728	B21-Se47729	B21-Se47730
Date Sampled			Sep 22, 2021	Sep 22, 2021	Sep 22, 2021	Sep 22, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	103	116	123	89
p-Terphenyl-d14 (surr.)	1	%	78	90	135	109
Ammonia (as N)	0.01	mg/L	0.07	0.09	0.04	0.05
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	210	150	370	360
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	0.07	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.04	0.04	< 0.05	< 0.05

Client Sample ID			B2G 1.23	B2G 1.24	B2G 1.27	B2G 1.3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47727	B21-Se47728	B21-Se47729	B21-Se47730
Date Sampled			Sep 22, 2021	Sep 22, 2021	Sep 22, 2021	Sep 22, 2021
Test/Reference	LOR	Unit				
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.10	0.21	0.05	0.08
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.03	0.03	0.05
Salinity (expressed as TDS)*	10	mg/L	130	90	220	220
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.1	1.3	0.4	0.6
Total Nitrogen (as N)*	0.2	mg/L	2.1	1.37	0.4	0.6
Total Suspended Solids Dried at 103–105°C	1	mg/L	39	140	24	18
Turbidity	1	NTU	100	180	1.5	3.2
Hardness mg equivalent CaCO ₃ /L	5	mg/L	60	51	120	120
Alkali Metals						
Calcium	0.5	mg/L	14	10	26	25
Magnesium	0.5	mg/L	5.9	6.1	13	13
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.003	0.002	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.004	0.005	0.003	0.003
Zinc (filtered)	0.005	mg/L	0.017	< 0.005	0.015	0.023

Client Sample ID			B2G 1.39	B2G 1.40	B2G 1.42	FIELD_BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47731	B21-Se47732	B21-Se47733	B21-Se47734
Date Sampled			Sep 23, 2021	Sep 23, 2021	Sep 23, 2021	Sep 21, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	139	117	113	95
p-Terphenyl-d14 (surr.)	1	%	134	95	111	119

Client Sample ID			B2G 1.39	B2G 1.40	B2G 1.42	FIELD_BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Se47731	B21-Se47732	B21-Se47733	B21-Se47734
Date Sampled			Sep 23, 2021	Sep 23, 2021	Sep 23, 2021	Sep 21, 2021
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.21	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	1900	1100	1200	< 10
Nitrate & Nitrite (as N)	0.05	mg/L	0.83	1.6	1.9	< 0.05
Nitrate (as N)	0.02	mg/L	0.81	1.5	1.9	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	0.03	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.03	0.01	0.01	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Salinity (expressed as TDS)*	10	mg/L	1100	660	720	< 10
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	0.7	0.5	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.83	2.3	2.4	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	40	18	11	2.8
Turbidity	1	NTU	33	7.3	5.4	< 1
Hardness mg equivalent CaCO3/L	5	mg/L	620	440	360	< 5
Alkali Metals						
Calcium	0.5	mg/L	64	50	40	< 0.5
Magnesium	0.5	mg/L	110	75	63	< 0.5
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	0.002	0.002	< 0.001
Zinc (filtered)	0.005	mg/L	0.009	0.007	0.005	0.006

Client Sample ID			DUP_1	DUP_2	TRIP_1
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B21-Se47735	B21-Se47736	B21-Se47737
Date Sampled			Sep 21, 2021	Sep 23, 2021	Sep 24, 2021
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001

Client Sample ID			DUP_1	DUP_2	TRIP_1
Sample Matrix			Water	Water	Water
Eurofins Sample No.			B21-Se47735	B21-Se47736	B21-Se47737
Date Sampled			Sep 21, 2021	Sep 23, 2021	Sep 24, 2021
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	110	80	109
p-Terphenyl-d14 (surr.)	1	%	88	118	123
Ammonia (as N)	0.01	mg/L	0.03	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	6.9	< 5
Conductivity (at 25°C)	10	uS/cm	370	1100	1100
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	1.6	1.7
Nitrate (as N)	0.02	mg/L	0.02	1.6	1.7
Nitrite (as N)	0.02	mg/L	< 0.02	0.03	0.02
Phosphate total (as P)	0.01	mg/L	0.02	< 0.01	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	< 0.01	< 0.01	< 0.01
Salinity (expressed as TDS)*	10	mg/L	220	660	660
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.7	1.3	0.5
Total Nitrogen (as N)*	0.2	mg/L	0.7	2.9	2.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	17	15	17
Turbidity	1	NTU	7.6	1.9	1.9
Hardness mg equivalent CaCO3/L	5	mg/L	74	460	460
Alkali Metals					
Calcium	0.5	mg/L	12	61	54
Magnesium	0.5	mg/L	11	74	78
Heavy Metals					
Arsenic (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.001	0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.002	0.002
Zinc (filtered)	0.005	mg/L	0.009	< 0.005	0.026

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Sep 28, 2021	7 Days
Chlorophyll a - Method: LTM-INO-4340 Chlorophyll a in Waters	Melbourne	Sep 28, 2021	28 Days
Conductivity (at 25°C) - Method: APHA 2510B	Brisbane	Sep 24, 2021	28 Days
Salinity (expressed as TDS)* - Method: Result by Calculation	Brisbane	Sep 24, 2021	7 Days
Total Suspended Solids Dried at 103–105°C - Method: APHA 2540 D	Brisbane	Sep 24, 2021	7 Days
Turbidity - Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)	Melbourne	Sep 29, 2021	28 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Brisbane	Sep 24, 2021	28 Days
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	Sep 28, 2021	28 Days
Nitrate & Nitrite (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Sep 28, 2021	28 Days
Nitrate (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Sep 28, 2021	28 Days
Nitrite (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Sep 28, 2021	2 Days
Phosphate total (as P) - Method: LTM-INO-4040 Phosphate by CFA	Melbourne	Sep 28, 2021	28 Days
Phosphorus reactive (as P) - Method: APHA 4500-P	Melbourne	Sep 28, 2021	2 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	Sep 28, 2021	28 Days
Hardness Set			
Hardness mg equivalent CaCO3/L - Method: APHA 2340B Hardness by Calculation	Melbourne	Sep 28, 2021	28 Days
Alkali Metals - Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES	Melbourne	Sep 28, 2021	180 Days

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006

Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 826889
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Sep 23, 2021 11:00 AM
Due: Sep 30, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P
Melbourne Laboratory - NATA # 1261 Site # 1254						X				X	X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X			X		
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G 1.2	Sep 21, 2021	3:05PM	Water	B21-Se47719	X	X	X	X	X	X	X	X	X
2	B2G 1.2R	Sep 21, 2021	3:35PM	Water	B21-Se47720	X	X	X	X	X	X	X	X	X
3	B2G 1.3	Sep 22, 2021	8:30AM	Water	B21-Se47721	X	X	X	X	X	X	X	X	X
4	B2G 1.6	Sep 22, 2021	8:00AM	Water	B21-Se47722	X	X	X	X	X	X	X	X	X
5	B2G 1.7	Sep 22, 2021	12:10PM	Water	B21-Se47723	X	X	X	X	X	X	X	X	X
6	B2G 1.11	Sep 22, 2021	9:30AM	Water	B21-Se47724	X	X	X	X	X	X	X	X	X
7	B2G 1.16	Sep 22, 2021	11:15AM	Water	B21-Se47725	X	X	X	X	X	X	X	X	X
8	B2G 1.18	Sep 22, 2021	11:45AM	Water	B21-Se47726	X	X	X	X	X	X	X	X	X
9	B2G 1.23	Sep 22, 2021	1:10PM	Water	B21-Se47727	X	X	X	X	X	X	X	X	X

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Melbourne Laboratory - NATA # 1261 Site # 1254						X				X	X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794							X	X	X			X		
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	B2G 1.24	Sep 22, 2021	2:00PM	Water	B21-Se47728	X	X	X	X	X	X	X	X	X
11	B2G 1.27	Sep 22, 2021	2:30PM	Water	B21-Se47729	X	X	X	X	X	X	X	X	X
12	B2G 1.3	Sep 22, 2021	3:10PM	Water	B21-Se47730	X	X	X	X	X	X	X	X	X
13	B2G 1.39	Sep 23, 2021	6:40AM	Water	B21-Se47731	X	X	X	X	X	X	X	X	X
14	B2G 1.40	Sep 23, 2021	7:10AM	Water	B21-Se47732	X	X	X	X	X	X	X	X	X
15	B2G 1.42	Sep 23, 2021	8:10AM	Water	B21-Se47733	X	X	X	X	X	X	X	X	X
16	FIELD BLANK	Sep 21, 2021		Water	B21-Se47734	X	X	X	X	X	X	X	X	X
17	DUP_1	Sep 21, 2021		Water	B21-Se47735	X	X	X	X	X	X	X	X	X
18	DUP_2	Sep 23, 2021		Water	B21-Se47736	X	X	X	X	X	X	X	X	X
19	TRIP_1	Sep 24, 2021		Water	B21-Se47737	X	X	X	X	X	X	X	X	X
Test Counts						19	19	19	19	19	19	19	19	19

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	99			70-130	Pass	
Acenaphthylene	%	71			70-130	Pass	
Anthracene	%	74			70-130	Pass	
Benz(a)anthracene	%	88			70-130	Pass	
Benzo(a)pyrene	%	79			70-130	Pass	
Benzo(b&j)fluoranthene	%	85			70-130	Pass	
Benzo(g,h,i)perylene	%	92			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene			%	91			70-130	Pass	
Chrysene			%	109			70-130	Pass	
Dibenz(a,h)anthracene			%	75			70-130	Pass	
Fluoranthene			%	88			70-130	Pass	
Fluorene			%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	73			70-130	Pass	
Naphthalene			%	107			70-130	Pass	
Phenanthrene			%	89			70-130	Pass	
Pyrene			%	86			70-130	Pass	
LCS - % Recovery									
Ammonia (as N)			%	102			70-130	Pass	
Nitrate & Nitrite (as N)			%	106			70-130	Pass	
Nitrate (as N)			%	106			70-130	Pass	
Nitrite (as N)			%	108			70-130	Pass	
Phosphate total (as P)			%	106			70-130	Pass	
Phosphorus reactive (as P)			%	96			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	130			70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	98			70-130	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	96			80-120	Pass	
Magnesium			%	95			80-120	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic (filtered)			%	90			80-120	Pass	
Cadmium (filtered)			%	96			80-120	Pass	
Chromium (filtered)			%	98			80-120	Pass	
Copper (filtered)			%	102			80-120	Pass	
Lead (filtered)			%	97			80-120	Pass	
Mercury (filtered)			%	99			80-120	Pass	
Nickel (filtered)			%	100			80-120	Pass	
Zinc (filtered)			%	109			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B21-Se47719	CP	%	107			70-130	Pass	
Nitrate & Nitrite (as N)	B21-Se47719	CP	%	105			70-130	Pass	
Nitrate (as N)	B21-Se47719	CP	%	105			70-130	Pass	
Nitrite (as N)	B21-Se47719	CP	%	105			70-130	Pass	
Phosphate total (as P)	L21-Se49532	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	B21-Se47720	CP	%	92			75-125	Pass	
Cadmium (filtered)	B21-Se47720	CP	%	102			75-125	Pass	
Chromium (filtered)	B21-Se47720	CP	%	100			75-125	Pass	
Copper (filtered)	B21-Se47720	CP	%	104			75-125	Pass	
Lead (filtered)	B21-Se47720	CP	%	98			75-125	Pass	
Mercury (filtered)	B21-Se47720	CP	%	105			75-125	Pass	
Nickel (filtered)	B21-Se47720	CP	%	102			75-125	Pass	
Zinc (filtered)	B21-Se47720	CP	%	107			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	B21-Se47722	CP	%	122			75-125	Pass	
Magnesium	B21-Se47722	CP	%	100			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B21-Se47728	CP	%	107			70-130	Pass	
Nitrate & Nitrite (as N)	B21-Se47728	CP	%	106			70-130	Pass	
Nitrate (as N)	B21-Se47728	CP	%	106			70-130	Pass	
Nitrite (as N)	B21-Se47728	CP	%	105			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	B21-Se47729	CP	%	128			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	B21-Se47730	CP	%	100			75-125	Pass	
Cadmium (filtered)	B21-Se47730	CP	%	108			75-125	Pass	
Chromium (filtered)	B21-Se47730	CP	%	103			75-125	Pass	
Copper (filtered)	B21-Se47730	CP	%	105			75-125	Pass	
Lead (filtered)	B21-Se47730	CP	%	101			75-125	Pass	
Mercury (filtered)	B21-Se47730	CP	%	106			75-125	Pass	
Nickel (filtered)	B21-Se47730	CP	%	103			75-125	Pass	
Zinc (filtered)	B21-Se47730	CP	%	102			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	B21-Se47732	CP	%	119			75-125	Pass	
Magnesium	B21-Se47732	CP	%	109			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B21-Se47719	CP	mg/L	0.02	0.02	2.0	30%	Pass	
Chlorophyll a	B21-Se47719	CP	ug/L	< 5	< 5	<1	30%	Pass	
Conductivity (at 25°C)	B21-Se47719	CP	uS/cm	270	260	1.5	30%	Pass	
Nitrate & Nitrite (as N)	B21-Se47719	CP	mg/L	0.12	0.12	3.0	30%	Pass	
Nitrate (as N)	B21-Se47719	CP	mg/L	0.12	0.11	5.0	30%	Pass	
Nitrite (as N)	B21-Se47719	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B21-Se52728	NCP	mg/L	0.4	0.5	8.0	30%	Pass	
Total Suspended Solids Dried at 103–105°C	B21-Se47719	CP	mg/L	14	15	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	B21-Se47719	CP	mg/L	0.002	0.002	1.0	30%	Pass	
Chromium (filtered)	B21-Se47719	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B21-Se47719	CP	mg/L	0.001	0.002	5.0	30%	Pass	
Lead (filtered)	B21-Se47719	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	B21-Se47719	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	B21-Se47719	CP	mg/L	0.002	0.002	2.0	30%	Pass	
Zinc (filtered)	B21-Se47719	CP	mg/L	0.005	< 0.005	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Turbidity	B21-Se47721	CP	NTU	4.2	9.5	77	30%	Fail	Q15
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Benzo(b&j)fluoranthene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-Se47722	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	B21-Se47722	CP	mg/L	9.5	11	13	30%	Pass
Magnesium	B21-Se47722	CP	mg/L	6.9	7.7	11	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chlorophyll a	B21-Se47727	CP	ug/L	< 5	< 5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Se47728	CP	mg/L	0.09	0.10	11	30%	Pass
Nitrate & Nitrite (as N)	B21-Se47728	CP	mg/L	0.07	0.07	1.0	30%	Pass
Nitrate (as N)	B21-Se47728	CP	mg/L	0.04	0.03	41	30%	Fail
Nitrite (as N)	B21-Se47728	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Phosphate total (as P)	B21-Se47728	CP	mg/L	0.21	0.20	2.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25°C)	B21-Se47729	CP	uS/cm	370	360	1.9	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-Se47729	CP	mg/L	24	23	1.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-Se47729	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chromium (filtered)	B21-Se47729	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-Se47729	CP	mg/L	0.002	0.002	2.0	30%	Pass
Mercury (filtered)	B21-Se47729	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-Se47729	CP	mg/L	0.003	0.003	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-Se47732	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass

Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	B21-Se47732	CP	mg/L	50	54	7.0	30%	Pass	
Magnesium	B21-Se47732	CP	mg/L	75	79	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ryan Gilbert	Analytical Services Manager
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Aurecon Australia (BRIS) Pty Ltd
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QLD 4006



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Accreditation Number 1261
Site Number 1254

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 inspection, proficiency testing scheme providers and
 reference materials producers reports and certificates.

Attention: **James Bone**

Report **833642-W**
Project name **B2G SWQ**
Project ID **511481**
Received Date **Oct 20, 2021**

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Oc41886	B21-Oc41887	B21-Oc41888	B21-Oc41889
Date Sampled			Oct 18, 2021	Oct 18, 2021	Oct 19, 2021	Oct 19, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	98	111	91	100
p-Terphenyl-d14 (surr.)	1	%	79	71	71	80
Ammonia (as N)	0.01	mg/L	0.02	0.01	0.02	0.03
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	270	270	360	350
Nitrate & Nitrite (as N)	0.05	mg/L	0.24	0.25	< 0.05	0.07
Nitrate (as N)	0.02	mg/L	0.24	0.24	< 0.02	0.05
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.02
Phosphate total (as P)	0.01	mg/L	0.09	0.09	0.03	0.04
Phosphorus reactive (as P)	0.01	mg/L	0.05	0.06	< 0.01	0.01
Salinity (expressed as TDS)*	10	mg/L	160	150	190	170
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.5	1.1	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	0.74	1.35	< 0.2	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	28	27	16	29
Turbidity	1	NTU	21	16	12	23
Hardness mg equivalent CaCO3/L	5	mg/L	48	58	55	48

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Oc41886	B21-Oc41887	B21-Oc41888	B21-Oc41889
Date Sampled			Oct 18, 2021	Oct 18, 2021	Oct 19, 2021	Oct 19, 2021
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	8.3	10	11	9.2
Magnesium	0.5	mg/L	6.7	7.8	6.6	6.0
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.003	0.004	0.002	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	< 0.001	0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.002	< 0.001	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.006	< 0.005

Client Sample ID			B2G 1.7	B2G 1.11	B2G 1.16	B2G 1.18
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Oc41890	B21-Oc41891	B21-Oc41892	B21-Oc41893
Date Sampled			Oct 18, 2021	Oct 19, 2021	Oct 19, 2021	Oct 19, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	101	91	100	98
p-Terphenyl-d14 (surr.)	1	%	85	71	80	79
Ammonia (as N)	0.01	mg/L	0.04	0.01	0.01	0.03
Chlorophyll a	5	ug/L	< 5	< 5	9.4	< 5
Conductivity (at 25°C)	10	uS/cm	330	410	330	240
Nitrate & Nitrite (as N)	0.05	mg/L	0.06	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.05	< 0.02	< 0.02	< 0.02
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.04	0.03	0.05	0.12
Phosphorus reactive (as P)	0.01	mg/L	0.01	< 0.01	< 0.01	0.03
Salinity (expressed as TDS)*	10	mg/L	160	230	290	250
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.5	0.7	1.7	1.4

Client Sample ID			B2G 1.7 Water B21-Oc41890 Oct 18, 2021	B2G 1.11 Water B21-Oc41891 Oct 19, 2021	B2G 1.16 Water B21-Oc41892 Oct 19, 2021	B2G 1.18 Water B21-Oc41893 Oct 19, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Total Nitrogen (as N)*	0.2	mg/L	0.56	0.7	1.7	1.4
Total Suspended Solids Dried at 103–105°C	1	mg/L	24	11	67	21
Turbidity	1	NTU	15	11	140	140
Hardness mg equivalent CaCO3/L	5	mg/L	52	64	67	54
Alkali Metals						
Calcium	0.5	mg/L	11	14	17	13
Magnesium	0.5	mg/L	6.1	7.4	6.3	5.4
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.002	< 0.001	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	< 0.001	0.003	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.002	0.003	0.002
Zinc (filtered)	0.005	mg/L	0.062	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.24 Water B21-Oc41894 Oct 19, 2021	B2G 1.27 Water B21-Oc41895 Oct 19, 2021	B2G 1.33 Water B21-Oc41896 Oct 19, 2021	B2G 1.39 Water B21-Oc41897 Oct 20, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	111	90	98	101
p-Terphenyl-d14 (surr.)	1	%	71	86	72	85
Ammonia (as N)	0.01	mg/L	0.05	0.15	0.04	0.02
Chlorophyll a	5	ug/L	5.3	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	220	130	290	970
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	1.8	1.0	0.17
Nitrate (as N)	0.02	mg/L	< 0.05	1.8	1.0	0.17

Client Sample ID			B2G 1.24	B2G 1.27	B2G 1.33	B2G 1.39
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Oc41894	B21-Oc41895	B21-Oc41896	B21-Oc41897
Date Sampled			Oct 19, 2021	Oct 19, 2021	Oct 19, 2021	Oct 20, 2021
Test/Reference	LOR	Unit				
Nitrite (as N)	0.02	mg/L	< 0.02	0.04	0.03	< 0.02
Phosphate total (as P)	0.01	mg/L	0.24	2.1	0.30	0.08
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.20	0.20	0.04
Salinity (expressed as TDS)*	10	mg/L	360	300	170	380
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	3.6	< 0.2	< 0.2
Total Nitrogen (as N)*	0.2	mg/L	< 0.2	5.4	1	< 0.2
Total Suspended Solids Dried at 103–105°C	1	mg/L	150	1600	42	41
Turbidity	1	NTU	290	3600	66	43
Hardness mg equivalent CaCO ₃ /L	5	mg/L	51	77	70	200
Alkali Metals						
Calcium	0.5	mg/L	10.0	10	15	24
Magnesium	0.5	mg/L	6.3	13	7.8	35
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	0.003	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	0.003	0.005	0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.40	B2G 1.42	DUP_1	DUP_2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Oc41898	B21-Oc41899	B21-Oc41900	B21-Oc41901
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 19, 2020	Oct 20, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	127	110	135	90
p-Terphenyl-d14 (surr.)	1	%	73	118	82	86

Client Sample ID			B2G 1.40	B2G 1.42	DUP_1	DUP_2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-Oc41898	B21-Oc41899	B21-Oc41900	B21-Oc41901
Date Sampled			Oct 20, 2021	Oct 20, 2021	Oct 19, 2020	Oct 20, 2021
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	860	970	350	860
Nitrate & Nitrite (as N)	0.05	mg/L	2.0	2.1	< 0.05	2.0
Nitrate (as N)	0.02	mg/L	2.0	2.1	< 0.02	2.0
Nitrite (as N)	0.02	mg/L	0.03	< 0.02	< 0.02	0.03
Phosphate total (as P)	0.01	mg/L	0.11	0.10	0.04	0.11
Phosphorus reactive (as P)	0.01	mg/L	0.06	0.08	0.01	0.07
Salinity (expressed as TDS)*	10	mg/L	360	410	180	340
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.4	< 0.2	1.9	1.9
Total Nitrogen (as N)*	0.2	mg/L	2.4	2.1	1.9	3.9
Total Suspended Solids Dried at 103–105°C	1	mg/L	63	24	15	62
Turbidity	1	NTU	43	12	13	48
Hardness mg equivalent CaCO3/L	5	mg/L	240	300	61	260
Alkali Metals						
Calcium	0.5	mg/L	34	45	11	41
Magnesium	0.5	mg/L	39	46	8.1	39
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	0.001	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.002	< 0.001	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.011	0.017

Client Sample ID			TRIP_1	FIELD BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			B21-Oc41902	B21-Oc41903
Date Sampled			Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			TRIP_1	FIELD BLANK
Sample Matrix			Water	Water
Eurofins Sample No.			B21-Oc41902	B21-Oc41903
Date Sampled			Oct 20, 2021	Oct 20, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	98	76
p-Terphenyl-d14 (surr.)	1	%	72	66
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	860	< 10
Nitrate & Nitrite (as N)	0.05	mg/L	1.9	< 0.05
Nitrate (as N)	0.02	mg/L	1.9	< 0.02
Nitrite (as N)	0.02	mg/L	0.03	< 0.02
Phosphate total (as P)	0.01	mg/L	0.12	< 0.01
Phosphorus reactive (as P)	0.01	mg/L	0.06	< 0.01
Salinity (expressed as TDS)*	10	mg/L	350	18
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	4.3	1.1
Total Nitrogen (as N)*	0.2	mg/L	6.2	1.1
Total Suspended Solids Dried at 103–105°C	1	mg/L	60	3.8
Turbidity	1	NTU	40	< 1
Hardness mg equivalent CaCO3/L	5	mg/L	270	< 5
Alkali Metals				
Calcium	0.5	mg/L	40	< 0.5
Magnesium	0.5	mg/L	42	< 0.5
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	< 0.001
Zinc (filtered)	0.005	mg/L	0.007	0.023

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Oct 22, 2021	7 Days
Chlorophyll a - Method: LTM-INO-4340 Chlorophyll a in Waters	Melbourne	Nov 06, 2021	28 Days
Conductivity (at 25°C) - Method: LTM-INO-4030 Conductivity	Melbourne	Oct 22, 2021	28 Days
Salinity (expressed as TDS)* - Method: LTM-INO-4030	Melbourne	Oct 27, 2021	7 Days
Total Suspended Solids Dried at 103–105°C - Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry	Melbourne	Oct 22, 2021	7 Days
Turbidity - Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)	Melbourne	Nov 08, 2021	28 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Brisbane	Oct 20, 2021	28 Days
Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P			
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	Oct 22, 2021	28 Days
Nitrate & Nitrite (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Oct 22, 2021	28 Days
Nitrate (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Oct 22, 2021	28 Days
Nitrite (as N) - Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA	Melbourne	Oct 22, 2021	2 Days
Phosphate total (as P) - Method: LTM-INO-4040 Phosphate by CFA	Melbourne	Oct 22, 2021	28 Days
Phosphorus reactive (as P) - Method: APHA 4500-P	Melbourne	Oct 22, 2021	2 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	Oct 22, 2021	28 Days
Hardness Set			
Hardness mg equivalent CaCO3/L - Method: APHA 2340B Hardness by Calculation	Melbourne	Oct 22, 2021	28 Days
Alkali Metals - Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES	Melbourne	Oct 22, 2021	180 Days

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 833642
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Oct 20, 2021 11:05 AM
Due: Oct 27, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794												X		
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G 1.2	Oct 18, 2021	3:10PM	Water	B21-Oc41886	X	X	X	X	X	X	X	X	X
2	B2G 1.2R	Oct 18, 2021	3:45PM	Water	B21-Oc41887	X	X	X	X	X	X	X	X	X
3	B2G 1.3	Oct 19, 2021	8:45AM	Water	B21-Oc41888	X	X	X	X	X	X	X	X	X
4	B2G 1.6	Oct 19, 2021	7:50AM	Water	B21-Oc41889	X	X	X	X	X	X	X	X	X
5	B2G 1.7	Oct 18, 2021	11:45AM	Water	B21-Oc41890	X	X	X	X	X	X	X	X	X
6	B2G 1.11	Oct 19, 2021	10:00AM	Water	B21-Oc41891	X	X	X	X	X	X	X	X	X
7	B2G 1.16	Oct 19, 2021	11:20AM	Water	B21-Oc41892	X	X	X	X	X	X	X	X	X
8	B2G 1.18	Oct 19, 2021	11:55AM	Water	B21-Oc41893	X	X	X	X	X	X	X	X	X
9	B2G 1.24	Oct 19, 2021	1:25PM	Water	B21-Oc41894	X	X	X	X	X	X	X	X	X

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Sample Detail						Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Hardness Set	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X		X	X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794												X		
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	B2G 1.27	Oct 19, 2021	2:00PM	Water	B21-Oc41895	X	X	X	X	X	X	X	X	X
11	B2G 1.33	Oct 19, 2021	3:55PM	Water	B21-Oc41896	X	X	X	X	X	X	X	X	X
12	B2G 1.39	Oct 20, 2021	6:45AM	Water	B21-Oc41897	X	X	X	X	X	X	X	X	X
13	B2G 1.40	Oct 20, 2021	7:30AM	Water	B21-Oc41898	X	X	X	X	X	X	X	X	X
14	B2G 1.42	Oct 20, 2021	8:20AM	Water	B21-Oc41899	X	X	X	X	X	X	X	X	X
15	DUP_1	Oct 19, 2020		Water	B21-Oc41900	X	X	X	X	X	X	X	X	X
16	DUP_2	Oct 20, 2021		Water	B21-Oc41901	X	X	X	X	X	X	X	X	X
17	TRIP_1	Oct 20, 2021		Water	B21-Oc41902	X	X	X	X	X	X	X	X	X
18	FIELD BLANK	Oct 20, 2021		Water	B21-Oc41903	X	X	X	X	X	X	X	X	X
Test Counts						18	18	18	18	18	18	18	18	18

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Conductivity (at 25°C)	uS/cm	< 10			10	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	1.0			1	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	110			70-130	Pass	
Acenaphthylene	%	100			70-130	Pass	
Anthracene	%	91			70-130	Pass	
Benz(a)anthracene	%	105			70-130	Pass	
Benzo(a)pyrene	%	86			70-130	Pass	
Benzo(b&j)fluoranthene	%	89			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(g,h,i)perylene			%	101			70-130	Pass	
Benzo(k)fluoranthene			%	117			70-130	Pass	
Chrysene			%	110			70-130	Pass	
Dibenz(a,h)anthracene			%	91			70-130	Pass	
Fluoranthene			%	105			70-130	Pass	
Fluorene			%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	96			70-130	Pass	
Naphthalene			%	99			70-130	Pass	
Phenanthrene			%	115			70-130	Pass	
Pyrene			%	90			70-130	Pass	
LCS - % Recovery									
Ammonia (as N)			%	107			70-130	Pass	
Conductivity (at 25°C)			%	103			70-130	Pass	
Nitrate & Nitrite (as N)			%	109			70-130	Pass	
Nitrate (as N)			%	109			70-130	Pass	
Nitrite (as N)			%	107			70-130	Pass	
Phosphate total (as P)			%	105			70-130	Pass	
Phosphorus reactive (as P)			%	111			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	89			70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	101			70-130	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	108			80-120	Pass	
Magnesium			%	90			80-120	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic (filtered)			%	114			80-120	Pass	
Cadmium (filtered)			%	103			80-120	Pass	
Chromium (filtered)			%	99			80-120	Pass	
Copper (filtered)			%	93			80-120	Pass	
Lead (filtered)			%	101			80-120	Pass	
Mercury (filtered)			%	86			80-120	Pass	
Nickel (filtered)			%	94			80-120	Pass	
Zinc (filtered)			%	87			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B21-Oc41886	CP	%	105			70-130	Pass	
Nitrate & Nitrite (as N)	B21-Oc41886	CP	%	109			70-130	Pass	
Nitrate (as N)	B21-Oc41886	CP	%	109			70-130	Pass	
Nitrite (as N)	B21-Oc41886	CP	%	103			70-130	Pass	
Phosphate total (as P)	L21-Oc42241	NCP	%	95			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	N21-Oc43605	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M21-Oc38228	NCP	%	100			75-125	Pass	
Magnesium	M21-Oc39181	NCP	%	108			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B21-Oc41887	CP	%	116			70-130	Pass	
Acenaphthylene	B21-Oc41887	CP	%	103			70-130	Pass	
Anthracene	B21-Oc41887	CP	%	93			70-130	Pass	
Benz(a)anthracene	B21-Oc41887	CP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	B21-Oc41887	CP	%	91		70-130	Pass	
Benzo(b&j)fluoranthene	B21-Oc41887	CP	%	92		70-130	Pass	
Benzo(g,h,i)perylene	B21-Oc41887	CP	%	116		70-130	Pass	
Benzo(k)fluoranthene	B21-Oc41887	CP	%	95		70-130	Pass	
Chrysene	B21-Oc41887	CP	%	112		70-130	Pass	
Dibenz(a,h)anthracene	B21-Oc41887	CP	%	80		70-130	Pass	
Fluoranthene	B21-Oc41887	CP	%	102		70-130	Pass	
Fluorene	B21-Oc41887	CP	%	103		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-Oc41887	CP	%	87		70-130	Pass	
Naphthalene	B21-Oc41887	CP	%	109		70-130	Pass	
Phenanthrene	B21-Oc41887	CP	%	105		70-130	Pass	
Pyrene	B21-Oc41887	CP	%	111		70-130	Pass	
Spike - % Recovery								
				Result 1				
Total Kjeldahl Nitrogen (as N)	B21-Oc41887	CP	%	89		70-130	Pass	
Spike - % Recovery								
				Result 1				
Heavy Metals								
Arsenic (filtered)	B21-Oc41887	CP	%	108		75-125	Pass	
Cadmium (filtered)	B21-Oc41887	CP	%	99		75-125	Pass	
Chromium (filtered)	B21-Oc41887	CP	%	96		75-125	Pass	
Copper (filtered)	B21-Oc41887	CP	%	91		75-125	Pass	
Lead (filtered)	B21-Oc41887	CP	%	98		75-125	Pass	
Mercury (filtered)	B21-Oc41887	CP	%	93		75-125	Pass	
Nickel (filtered)	B21-Oc41887	CP	%	93		75-125	Pass	
Zinc (filtered)	B21-Oc41887	CP	%	78		75-125	Pass	
Spike - % Recovery								
				Result 1				
Ammonia (as N)	B21-Oc41896	CP	%	103		70-130	Pass	
Nitrate & Nitrite (as N)	B21-Oc41896	CP	%	105		70-130	Pass	
Nitrate (as N)	B21-Oc41896	CP	%	105		70-130	Pass	
Nitrite (as N)	B21-Oc41896	CP	%	101		70-130	Pass	
Spike - % Recovery								
				Result 1				
Polycyclic Aromatic Hydrocarbons								
Acenaphthene	B21-Oc41897	CP	%	94		70-130	Pass	
Anthracene	B21-Oc41897	CP	%	89		70-130	Pass	
Benz(a)anthracene	B21-Oc41897	CP	%	94		70-130	Pass	
Benzo(a)pyrene	B21-Oc41897	CP	%	75		70-130	Pass	
Benzo(b&j)fluoranthene	B21-Oc41897	CP	%	82		70-130	Pass	
Benzo(g,h,i)perylene	B21-Oc41897	CP	%	120		70-130	Pass	
Benzo(k)fluoranthene	B21-Oc41897	CP	%	92		70-130	Pass	
Chrysene	B21-Oc41897	CP	%	109		70-130	Pass	
Dibenz(a,h)anthracene	B21-Oc41897	CP	%	106		70-130	Pass	
Fluoranthene	B21-Oc41897	CP	%	90		70-130	Pass	
Fluorene	B21-Oc41897	CP	%	84		70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-Oc41897	CP	%	114		70-130	Pass	
Naphthalene	B21-Oc41897	CP	%	87		70-130	Pass	
Phenanthrene	B21-Oc41897	CP	%	95		70-130	Pass	
Pyrene	B21-Oc41897	CP	%	97		70-130	Pass	
Spike - % Recovery								
				Result 1				
Total Kjeldahl Nitrogen (as N)	B21-Oc41897	CP	%	75		70-130	Pass	
Spike - % Recovery								
				Result 1				
Heavy Metals								
Arsenic (filtered)	B21-Oc41897	CP	%	114		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium (filtered)	B21-Oc41897	CP	%	101			75-125	Pass	
Chromium (filtered)	B21-Oc41897	CP	%	99			75-125	Pass	
Copper (filtered)	B21-Oc41897	CP	%	92			75-125	Pass	
Lead (filtered)	B21-Oc41897	CP	%	101			75-125	Pass	
Mercury (filtered)	B21-Oc41897	CP	%	95			75-125	Pass	
Nickel (filtered)	B21-Oc41897	CP	%	92			75-125	Pass	
Zinc (filtered)	B21-Oc41897	CP	%	80			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	B21-Oc41886	CP	mg/L	0.02	0.02	35	30%	Fail	Q15
Conductivity (at 25°C)	B21-Oc41886	CP	uS/cm	270	270	<1	30%	Pass	
Nitrate & Nitrite (as N)	B21-Oc41886	CP	mg/L	0.24	0.23	6.0	30%	Pass	
Nitrate (as N)	B21-Oc41886	CP	mg/L	0.24	0.23	3.0	30%	Pass	
Nitrite (as N)	B21-Oc41886	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B21-Oc41886	CP	mg/L	0.5	0.6	16	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	M21-Oc38228	NCP	mg/L	19	23	17	30%	Pass	
Magnesium	M21-Oc39181	NCP	mg/L	330	320	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	B21-Oc41886	CP	mg/L	0.003	0.004	7.0	30%	Pass	
Cadmium (filtered)	B21-Oc41886	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	B21-Oc41886	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	B21-Oc41886	CP	mg/L	0.002	0.002	3.0	30%	Pass	
Lead (filtered)	B21-Oc41886	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	B21-Oc41886	CP	mg/L	0.002	0.002	8.0	30%	Pass	
Zinc (filtered)	B21-Oc42155	NCP	mg/L	0.044	0.052	16	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphate total (as P)	B21-Oc41888	CP	mg/L	0.03	0.03	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B21-Oc41890	CP	ug/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	B21-Oc41895	CP	mg/L	1600	2100	24	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Naphthalene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-Oc41896	CP	mg/L	0.04	0.04	1.0	30%	Pass
Conductivity (at 25°C)	B21-Oc41896	CP	uS/cm	290	280	<1	30%	Pass
Nitrate & Nitrite (as N)	B21-Oc41896	CP	mg/L	1.0	1.1	2.0	30%	Pass
Nitrate (as N)	B21-Oc41896	CP	mg/L	1.0	1.0	2.0	30%	Pass
Nitrite (as N)	B21-Oc41896	CP	mg/L	0.03	0.03	3.0	30%	Pass
Total Kjeldahl Nitrogen (as N)	B21-Oc41896	CP	mg/L	< 0.2	< 0.2	<1	30%	Pass
Turbidity	B21-Oc41896	CP	NTU	66	57	15	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chromium (filtered)	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-Oc41896	CP	mg/L	0.003	0.003	5.0	30%	Pass
Lead (filtered)	B21-Oc41896	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	B21-Oc41896	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-Oc41896	CP	mg/L	0.005	0.005	2.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chlorophyll a	B21-Oc41899	CP	ug/L	< 5	< 5	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	No
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Alana Wadsworth	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Aurecon Australia (BRIS) Pty Ltd
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QLD 4006



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Arrangement for the mutual recognition of the
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reference materials producers reports and certificates.

Attention: **James Bone**

Report **842984-W**
Project name **B2G SWQ**
Project ID **511481**
Received Date **Nov 19, 2021**

Client Sample ID			B2G 1.2	B2G 1.2R	B2G 1.3	B2G 1.6
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-No50474	B21-No50475	B21-No50476	B21-No50477
Date Sampled			Nov 17, 2021	Nov 17, 2021	Nov 18, 2021	Nov 18, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	83	86	90	71
p-Terphenyl-d14 (surr.)	1	%	130	123	86	57
Ammonia (as N)	0.01	mg/L	0.03	0.02	0.05	0.04
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	180	180	210	210
Nitrate & Nitrite (as N)	0.05	mg/L	0.24	0.27	0.22	0.18
Nitrate (as N)	0.02	mg/L	0.24	0.27	0.20	0.17
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.07	0.06	0.04	0.04
Phosphorus reactive (as P)	0.01	mg/L	0.05	0.06	0.03	0.02
Salinity (expressed as TDS)*	10	mg/L	115	115	134	134
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.61	0.46	0.45	0.44
Total Nitrogen (as N)*	0.2	mg/L	0.85	0.73	0.67	0.62
Total Suspended Solids Dried at 103–105°C	5	mg/L	6.8	5.2	9.3	8.1
Turbidity	1	NTU	5.2	55	69	62
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	26	27	18	21

Client Sample ID			B2G 1.2 Water B21-No50474 Nov 17, 2021	B2G 1.2R Water B21-No50475 Nov 17, 2021	B2G 1.3 Water B21-No50476 Nov 18, 2021	B2G 1.6 Water B21-No50477 Nov 18, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.004	0.004	0.002	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.003	0.003	0.002	0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.003	0.004	0.002	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.7 Water B21-No50478 Nov 17, 2021	B2G 1.11 Water B21-No50479 Nov 18, 2021	B2G 1.16 Water B21-No50480 Nov 18, 2021	B2G 1.18 Water B21-No50481 Nov 18, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	55	62	57	59
p-Terphenyl-d14 (surr.)	1	%	59	68	54	77
Ammonia (as N)	0.01	mg/L	0.04	0.16	0.10	0.10
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	210	150	150	170
Nitrate & Nitrite (as N)	0.05	mg/L	0.18	0.55	0.67	0.18
Nitrate (as N)	0.02	mg/L	0.17	0.54	0.60	0.16
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	0.07	< 0.02
Phosphate total (as P)	0.01	mg/L	0.05	0.05	0.10	0.10
Phosphorus reactive (as P)	0.01	mg/L	0.02	0.01	0.06	0.07
Salinity (expressed as TDS)*	10	mg/L	134	96	96	108.8
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.44	0.08	0.33	0.71
Total Nitrogen (as N)*	0.2	mg/L	0.62	0.63	1	0.89
Total Suspended Solids Dried at 103–105°C	5	mg/L	8.5	27	58	34
Turbidity	1	NTU	52	150	180	140
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	23	19	21	26

Client Sample ID			B2G 1.7 Water B21-No50478 Nov 17, 2021	B2G 1.11 Water B21-No50479 Nov 18, 2021	B2G 1.16 Water B21-No50480 Nov 18, 2021	B2G 1.18 Water B21-No50481 Nov 18, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.001	< 0.001	0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	0.003	0.003	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	0.004	0.003	0.003
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.23 Water B21-No50482 Nov 18, 2021	B2G 1.24 Water B21-No50483 Nov 18, 2021	B2G 1.27 Water B21-No50484 Nov 18, 2021	B2G 1.30 Water B21-No50485 Nov 18, 2021
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	68	94	90	85
p-Terphenyl-d14 (surr.)	1	%	116	94	128	98
Ammonia (as N)	0.01	mg/L	0.07	0.01	0.06	0.06
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	200	210	280	260
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	5.0	2.8	2.3
Nitrate (as N)	0.02	mg/L	< 0.02	5.0	2.6	2.2
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	0.16	0.18
Phosphate total (as P)	0.01	mg/L	0.13	0.37	0.41	0.34
Phosphorus reactive (as P)	0.01	mg/L	0.03	0.13	0.22	0.22
Salinity (expressed as TDS)*	10	mg/L	128	134	179	166
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.6	< 0.05	0.2	0.3
Total Nitrogen (as N)*	0.2	mg/L	0.6	5	3	2.6
Total Suspended Solids Dried at 103–105°C	5	mg/L	21	73	32	28
Turbidity	1	NTU	140	460	180	170
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	34	26	25	42

Client Sample ID			B2G 1.23	B2G 1.24	B2G 1.27	B2G 1.30
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-No50482	B21-No50483	B21-No50484	B21-No50485
Date Sampled			Nov 18, 2021	Nov 18, 2021	Nov 18, 2021	Nov 18, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.003	0.003	0.003
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.004	0.005	0.005	0.005
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.32	B2G 1.33	B2G 1.39	B2G 1.40
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-No50486	B21-No50487	B21-No50488	B21-No50489
Date Sampled			Nov 18, 2021	Nov 18, 2021	Nov 19, 2021	Nov 19, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	64	62	59	59
p-Terphenyl-d14 (surr.)	1	%	132	121	88	88
Ammonia (as N)	0.01	mg/L	0.03	0.04	0.10	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	270	270	930	470
Nitrate & Nitrite (as N)	0.05	mg/L	2.8	2.8	0.80	1.2
Nitrate (as N)	0.02	mg/L	2.6	2.6	0.78	1.1
Nitrite (as N)	0.02	mg/L	0.16	0.19	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	0.37	0.36	0.05	0.13
Phosphorus reactive (as P)	0.01	mg/L	0.23	0.22	0.03	0.06
Salinity (expressed as TDS)*	10	mg/L	173	173	595	301
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.2	0.3	0.4	< 0.05
Total Nitrogen (as N)*	0.2	mg/L	3	3.1	1.2	1.2
Total Suspended Solids Dried at 103–105°C	5	mg/L	29	34	87	< 5
Turbidity	1	NTU	98	100	45	190
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	51	22	81	51

Client Sample ID			B2G 1.32	B2G 1.33	B2G 1.39	B2G 1.40
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-No50486	B21-No50487	B21-No50488	B21-No50489
Date Sampled			Nov 18, 2021	Nov 18, 2021	Nov 19, 2021	Nov 19, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.003	0.003	0.002	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	0.005	0.007	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID			B2G 1.42	FIELD BLANK	DUP_1	DUP_2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-No50490	B21-No50491	B21-No50492	B21-No50493
Date Sampled			Nov 19, 2021	Nov 18, 2021	Nov 18, 2021	Nov 19, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	85	54	59	69
p-Terphenyl-d14 (surr.)	1	%	95	101	88	109
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.04	< 0.01
Chlorophyll a	5	ug/L	< 5	< 5	< 5	< 5
Conductivity (at 25°C)	10	uS/cm	590	< 10	250	540
Nitrate & Nitrite (as N)	0.05	mg/L	1.7	< 0.05	2.8	1.7
Nitrate (as N)	0.02	mg/L	1.6	< 0.02	2.6	1.6
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	0.17	0.05
Phosphate total (as P)	0.01	mg/L	0.11	< 0.01	0.36	0.08
Phosphorus reactive (as P)	0.01	mg/L	0.07	0.01	0.22	0.07
Salinity (expressed as TDS)*	10	mg/L	378	< 10	160	346
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.05	0.024	0.1	< 0.05
Total Nitrogen (as N)*	0.2	mg/L	1.7	< 0.2	2.9	1.7
Total Suspended Solids Dried at 103–105°C	5	mg/L	< 5	< 5	67	11
Turbidity	1	NTU	41	< 1	190	71
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	85	< 5	38	90

Client Sample ID			B2G 1.42	FIELD BLANK	DUP_1	DUP_2
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-No50490	B21-No50491	B21-No50492	B21-No50493
Date Sampled			Nov 19, 2021	Nov 18, 2021	Nov 18, 2021	Nov 19, 2021
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Copper (filtered)	0.001	mg/L	0.001	< 0.001	0.003	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002	< 0.001	0.005	0.002
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.006	< 0.005

Client Sample ID			TRIP_1
Sample Matrix			Water
Eurofins Sample No.			B21-No50494
Date Sampled			Nov 19, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	74
p-Terphenyl-d14 (surr.)	1	%	104
Ammonia (as N)	0.01	mg/L	< 0.01
Chlorophyll a	5	ug/L	< 5
Conductivity (at 25°C)	10	uS/cm	540
Nitrate & Nitrite (as N)	0.05	mg/L	1.7
Nitrate (as N)	0.02	mg/L	1.7
Nitrite (as N)	0.02	mg/L	< 0.02
Phosphate total (as P)	0.01	mg/L	0.09
Phosphorus reactive (as P)	0.01	mg/L	0.07
Salinity (expressed as TDS)*	10	mg/L	346
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.05
Total Nitrogen (as N)*	0.2	mg/L	1.7
Total Suspended Solids Dried at 103–105°C	5	mg/L	9.4
Turbidity	1	NTU	50
Calcium Hardness mg equivalent CaCO3/L	5	mg/L	57

Client Sample ID			TRIP_1
Sample Matrix			Water
Eurofins Sample No.			B21-No50494
Date Sampled			Nov 19, 2021
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001
Copper (filtered)	0.001	mg/L	0.001
Lead (filtered)	0.001	mg/L	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.002
Zinc (filtered)	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Nov 24, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Chlorophyll a	Melbourne	Dec 02, 2021	28 Days
- Method: LTM-INO-4340 Chlorophyll a in Waters			
Conductivity (at 25°C)	Brisbane	Nov 24, 2021	28 Days
- Method: APHA 2510B			
Salinity (expressed as TDS)*	Brisbane	Nov 23, 2021	7 Days
- Method: Result by Calculation			
Total Suspended Solids Dried at 103–105°C	Brisbane	Nov 23, 2021	7 Days
- Method: APHA 2540 D			
Turbidity	Melbourne	Nov 24, 2021	28 Days
- Method: Turbidity by classical using APHA 2130B (LTM-INO-4140)			
Calcium Hardness mg equivalent CaCO ₃ /L	Melbourne	Nov 24, 2021	28 Days
- Method: APHA 2340B Hardness by Calculation			
Metals M8 filtered	Brisbane	Nov 22, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B19E: Total N, TKN, NO _x , NO ₂ , NO ₃ , NH ₃ , Total P, Reactive P			
Ammonia (as N)	Melbourne	Nov 24, 2021	28 Days
- Method: APHA 4500-NH ₃ Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Nov 24, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrate (as N)	Melbourne	Nov 24, 2021	28 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Nitrite (as N)	Melbourne	Nov 24, 2021	2 Days
- Method: LTM-INO-4120 Analysis of NO _x NO ₂ NH ₃ by FIA			
Phosphate total (as P)	Melbourne	Nov 24, 2021	28 Days
- Method: LTM-INO-4040 Phosphate by CFA			
Phosphorus reactive (as P)	Melbourne	Nov 24, 2021	2 Days
- Method: APHA 4500-P			
Total Kjeldahl Nitrogen (as N)	Melbourne	Nov 24, 2021	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 842984
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Nov 19, 2021 11:30 AM
Due: Nov 26, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polyyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X				X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X	X			X	
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	B2G 1.2	Nov 17, 2021	3:20PM	Water	B21-No50474	X	X	X	X	X	X	X	X	X
2	B2G 1.2R	Nov 17, 2021	4:00PM	Water	B21-No50475	X	X	X	X	X	X	X	X	X
3	B2G 1.3	Nov 18, 2021	8:20AM	Water	B21-No50476	X	X	X	X	X	X	X	X	X
4	B2G 1.6	Nov 18, 2021	7:45AM	Water	B21-No50477	X	X	X	X	X	X	X	X	X
5	B2G 1.7	Nov 17, 2021	12:20PM	Water	B21-No50478	X	X	X	X	X	X	X	X	X
6	B2G 1.11	Nov 18, 2021	9:25AM	Water	B21-No50479	X	X	X	X	X	X	X	X	X
7	B2G 1.16	Nov 18, 2021	10:40AM	Water	B21-No50480	X	X	X	X	X	X	X	X	X
8	B2G 1.18	Nov 18, 2021	11:10AM	Water	B21-No50481	X	X	X	X	X	X	X	X	X
9	B2G 1.23	Nov 18, 2021	12:00PM	Water	B21-No50482	X	X	X	X	X	X	X	X	X

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 842984
Phone: 07 3173 8000
Fax: +61 7 3173 8001

Received: Nov 19, 2021 11:30 AM
Due: Nov 26, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polyyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X				X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X	X			X	
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	B2G 1.24	Nov 18, 2021	1:10PM	Water	B21-No50483	X	X	X	X	X	X	X	X	X
11	B2G 1.27	Nov 18, 2021	1:45PM	Water	B21-No50484	X	X	X	X	X	X	X	X	X
12	B2G 1.30	Nov 18, 2021	3:15PM	Water	B21-No50485	X	X	X	X	X	X	X	X	X
13	B2G 1.32	Nov 18, 2021	4:50PM	Water	B21-No50486	X	X	X	X	X	X	X	X	X
14	B2G 1.33	Nov 18, 2021	4:00PM	Water	B21-No50487	X	X	X	X	X	X	X	X	X
15	B2G 1.39	Nov 19, 2021	6:45AM	Water	B21-No50488	X	X	X	X	X	X	X	X	X
16	B2G 1.40	Nov 19, 2021	7:15AM	Water	B21-No50489	X	X	X	X	X	X	X	X	X
17	B2G 1.42	Nov 19, 2021	7:55AM	Water	B21-No50490	X	X	X	X	X	X	X	X	X
18	FIELD BLANK	Nov 18, 2021		Water	B21-No50491	X	X	X	X	X	X	X	X	X
19	DUP_1	Nov 18, 2021		Water	B21-No50492	X	X	X	X	X	X	X	X	X
20	DUP_2	Nov 19, 2021		Water	B21-No50493	X	X	X	X	X	X	X	X	X

Company Name: Aurecon Australia (BRIS) Pty Ltd
Address: Ground Floor, 25 King Street
Bowen Hills, Brisbane
QLD 4006
Project Name: B2G SWQ
Project ID: 511481

Order No.:
Report #: 842984
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Received: Nov 19, 2021 11:30 AM
Due: Nov 26, 2021
Priority: 5 Day
Contact Name: James Bone

Eurofins Analytical Services Manager : Alana Wadsworth

Sample Detail						Calcium Hardness mg equivalent CaCO3/L	Chlorophyll a	Conductivity (at 25°C)	Salinity (expressed as TDS)*	Total Suspended Solids Dried at 103-105°C	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Eurofins Suite B19E: Total N, TKN, NOx, NO2, NO3, NH3, Total P, Reactive P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X				X	X		X
Sydney Laboratory - NATA # 1261 Site # 18217														
Brisbane Laboratory - NATA # 1261 Site # 20794								X	X	X			X	
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
21	TRIP_1	Nov 19, 2021		Water	B21-No50494	X	X	X	X	X	X	X	X	X
Test Counts						21	21	21	21	21	21	21	21	21

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient
WA DWER	Sum of PFBA, PFPeA, PFHpA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chlorophyll a	ug/L	< 5			5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Phosphorus reactive (as P)	mg/L	< 0.01			0.01	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 5			5	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	86			70-130	Pass	
Acenaphthylene	%	73			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	119			70-130	Pass	
Benzo(a)pyrene	%	96			70-130	Pass	
Benzo(b&j)fluoranthene	%	82			70-130	Pass	
Benzo(g,h,i)perylene	%	112			70-130	Pass	
Benzo(k)fluoranthene	%	80			70-130	Pass	
Chrysene	%	90			70-130	Pass	
Dibenz(a,h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	106			70-130	Pass	
Fluorene	%	86			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene			%	104			70-130	Pass	
Naphthalene			%	122			70-130	Pass	
Phenanthrene			%	114			70-130	Pass	
Pyrene			%	113			70-130	Pass	
LCS - % Recovery									
Ammonia (as N)			%	108			70-130	Pass	
Nitrate & Nitrite (as N)			%	109			70-130	Pass	
Nitrate (as N)			%	109			70-130	Pass	
Nitrite (as N)			%	105			70-130	Pass	
Phosphate total (as P)			%	94			70-130	Pass	
Phosphorus reactive (as P)			%	97			70-130	Pass	
Total Suspended Solids Dried at 103–105°C			%	103			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic (filtered)			%	97			80-120	Pass	
Cadmium (filtered)			%	105			80-120	Pass	
Chromium (filtered)			%	105			80-120	Pass	
Copper (filtered)			%	111			80-120	Pass	
Lead (filtered)			%	103			80-120	Pass	
Mercury (filtered)			%	106			80-120	Pass	
Nickel (filtered)			%	108			80-120	Pass	
Zinc (filtered)			%	104			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	B21-No50475	CP	%	101			75-125	Pass	
Cadmium (filtered)	B21-No50475	CP	%	109			75-125	Pass	
Chromium (filtered)	B21-No50475	CP	%	106			75-125	Pass	
Copper (filtered)	B21-No50475	CP	%	111			75-125	Pass	
Lead (filtered)	B21-No50475	CP	%	103			75-125	Pass	
Mercury (filtered)	B21-No50475	CP	%	85			75-125	Pass	
Nickel (filtered)	B21-No50475	CP	%	107			75-125	Pass	
Zinc (filtered)	B21-No50475	CP	%	104			75-125	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B21-No50477	CP	%	109			70-130	Pass	
Nitrate & Nitrite (as N)	B21-No50477	CP	%	111			70-130	Pass	
Nitrate (as N)	B21-No50477	CP	%	111			70-130	Pass	
Nitrite (as N)	B21-No50477	CP	%	106			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B21-No50484	CP	%	91			70-130	Pass	
Acenaphthylene	B21-No50484	CP	%	91			70-130	Pass	
Anthracene	B21-No50484	CP	%	79			70-130	Pass	
Benz(a)anthracene	B21-No50484	CP	%	81			70-130	Pass	
Benzo(a)pyrene	B21-No50484	CP	%	111			70-130	Pass	
Benzo(b&j)fluoranthene	B21-No50484	CP	%	103			70-130	Pass	
Benzo(g,h,i)perylene	B21-No50484	CP	%	122			70-130	Pass	
Benzo(k)fluoranthene	B21-No50484	CP	%	107			70-130	Pass	
Chrysene	B21-No50484	CP	%	84			70-130	Pass	
Dibenz(a,h)anthracene	B21-No50484	CP	%	85			70-130	Pass	
Fluoranthene	B21-No50484	CP	%	80			70-130	Pass	
Fluorene	B21-No50484	CP	%	109			70-130	Pass	
Indeno(1.2.3-cd)pyrene	B21-No50484	CP	%	90			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	B21-No50484	CP	%	122			70-130	Pass	
Phenanthrene	B21-No50484	CP	%	88			70-130	Pass	
Pyrene	B21-No50484	CP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	B21-No50485	CP	%	113			75-125	Pass	
Cadmium (filtered)	B21-No50485	CP	%	116			75-125	Pass	
Chromium (filtered)	B21-No50485	CP	%	115			75-125	Pass	
Copper (filtered)	B21-No50485	CP	%	115			75-125	Pass	
Lead (filtered)	B21-No50485	CP	%	107			75-125	Pass	
Mercury (filtered)	B21-No50485	CP	%	97			75-125	Pass	
Nickel (filtered)	B21-No50485	CP	%	113			75-125	Pass	
Zinc (filtered)	B21-No50485	CP	%	109			75-125	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	B21-No50488	CP	%	109			70-130	Pass	
Nitrate & Nitrite (as N)	B21-No50488	CP	%	114			70-130	Pass	
Nitrate (as N)	B21-No50488	CP	%	114			70-130	Pass	
Nitrite (as N)	B21-No50488	CP	%	106			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	B21-No50491	CP	%	76			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	B21-No50494	CP	%	89			70-130	Pass	
Acenaphthylene	B21-No50494	CP	%	80			70-130	Pass	
Anthracene	B21-No50494	CP	%	90			70-130	Pass	
Benz(a)anthracene	B21-No50494	CP	%	118			70-130	Pass	
Benzo(a)pyrene	B21-No50494	CP	%	96			70-130	Pass	
Benzo(b&j)fluoranthene	B21-No50494	CP	%	82			70-130	Pass	
Benzo(g,h,i)perylene	B21-No50494	CP	%	108			70-130	Pass	
Benzo(k)fluoranthene	B21-No50494	CP	%	80			70-130	Pass	
Chrysene	B21-No50494	CP	%	108			70-130	Pass	
Dibenz(a,h)anthracene	B21-No50494	CP	%	99			70-130	Pass	
Fluoranthene	B21-No50494	CP	%	117			70-130	Pass	
Fluorene	B21-No50494	CP	%	90			70-130	Pass	
Indeno(1,2,3-cd)pyrene	B21-No50494	CP	%	99			70-130	Pass	
Naphthalene	B21-No50494	CP	%	118			70-130	Pass	
Phenanthrene	B21-No50494	CP	%	87			70-130	Pass	
Pyrene	B21-No50494	CP	%	83			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chlorophyll a	B21-No50474	CP	ug/L	< 5	< 5	<1	30%	Pass	
Phosphorus reactive (as P)	L21-De06127	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	B21-No50474	CP	mg/L	0.004	0.004	7.0	30%	Pass	
Copper (filtered)	B21-No50474	CP	mg/L	0.003	0.002	4.0	30%	Pass	
Lead (filtered)	B21-No50474	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	B21-No50474	CP	mg/L	0.003	0.003	6.0	30%	Pass	

Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-No50477	CP	mg/L	0.04	0.03	30	30%	Pass
Nitrate & Nitrite (as N)	B21-No50477	CP	mg/L	0.18	0.17	2.0	30%	Pass
Nitrate (as N)	B21-No50477	CP	mg/L	0.17	0.17	2.0	30%	Pass
Nitrite (as N)	B21-No50477	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Phosphate total (as P)	B21-No50477	CP	mg/L	0.04	0.04	2.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Turbidity	B21-No50479	CP	NTU	150	140	5.0	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-No50483	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-No50484	CP	mg/L	0.06	0.06	10	30%	Pass
Nitrate & Nitrite (as N)	B21-No50484	CP	mg/L	2.8	2.8	1.0	30%	Pass
Nitrate (as N)	B21-No50484	CP	mg/L	2.6	2.6	1.0	30%	Pass
Nitrite (as N)	B21-No50484	CP	mg/L	0.16	0.16	3.0	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-No50484	CP	mg/L	32	40	23	30%	Pass
Turbidity	B21-No50484	CP	NTU	180	160	10	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-No50484	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-No50484	CP	mg/L	0.003	0.003	6.0	30%	Pass
Mercury (filtered)	B21-No50484	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-No50484	CP	mg/L	0.005	0.005	4.0	30%	Pass
Zinc (filtered)	B21-No50484	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	B21-No50488	CP	mg/L	0.10	0.10	3.0	30%	Pass
Nitrate & Nitrite (as N)	B21-No50488	CP	mg/L	0.80	0.82	2.0	30%	Pass
Nitrate (as N)	B21-No50488	CP	mg/L	0.78	0.80	2.0	30%	Pass
Nitrite (as N)	B21-No50488	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Total Suspended Solids Dried at 103–105°C	B21-No50488	CP	mg/L	87	87	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&i)fluoranthene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	B21-No50493	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chlorophyll a	B21-No50493	CP	ug/L	< 5	< 5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Turbidity	B21-No50494	CP	NTU	50	50	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	B21-No50494	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	B21-No50494	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	B21-No50494	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	B21-No50494	CP	mg/L	0.001	< 0.001	23	30%	Pass
Mercury (filtered)	B21-No50494	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	B21-No50494	CP	mg/L	0.002	0.002	4.0	30%	Pass
Zinc (filtered)	B21-No50494	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Alana Wadsworth	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
Steven Trout	Senior Analyst-Metal (QLD)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Appendix D

Field data reporting sheets

DRAFT

Duplicate

BGC 1.2.

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | ]
Site Name	BGC SW 2 Maryvale River		
Date	[14 / 12 / 2016]	Project Name	
Time (24 hrs)	[17 : 30]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	256.1	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	21.5	[ | | ]	2080.5
pH	8.04	[ | | ]	2100.5
Dissolved O_2 mg/l	55.3%	[ | | ]	2351.5
Turbidity NTU		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$		[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3		[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3		[ | | ]	2114.5
Transparency (secchi) m		[ | | ]	2046.5
Velocity m/s		[ | | ]	240.0
Gauge Height m		[ | | ]	100.0
Discharge m^3/s}		[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain present Cloud cover high Wind high

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10.0% Water Odour: nil

Water Surface Condition: Normal Stick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [100] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

BLG 1-2

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: grazing

Adjacent landuse: Left bank: Score 2 Type WIL Right bank: Score 2 Type NIC

0. Urban/semi-urban, industrial

1. Irrigated cropping, intensive forestry or heavy grazing

2. Non-irrigated cropping, moderate grazing

3. Light grazing, vegetation clearing

4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 10 % vegetated

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 50 m Right bank 50 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 30 m Right bank 30+ m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Pericaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E

N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	5261.2R	Sample Number	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
Site Name	Mac River		
Date	14/12/2010	Project Name	
Time (24 hrs)	17:00	QHSS Analysis No.	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
Project Code	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []	Submitted	A B C D E F G H I J K L M N
Run Code	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []	Received	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
Party	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	256.1 $\mu\text{S/cm}$	[] [] []	2010.5
Water Temperature $^\circ\text{C}$	25.7	[] [] []	2080.5
pH	8.2	[] [] []	2100.5
Dissolved O_2 mg/l	66.7%	[] [] []	2351.5
Turbidity NTU		[] [] []	2030.5
Air Temperature $^\circ\text{C}$		[] [] []	2065.5
Total Alkalinity mg/l CaCO_3		[] [] []	2113.5
Phenol Alkalinity mg/l CaCO_3		[] [] []	2114.5
Transparency (secchi) m		[] [] []	2046.5
Velocity m/s		[] [] []	240.0
Gauge Height m		[] [] []	100.0
Discharge m^3/s		[] [] []	140.0
Discharge Method:	measured (gauged) ☒ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: Constant drizzle, minimal overcast
 Today: Rain present Cloud cover high Wind high
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: oil

Water Surface Condition: Normal ☒ Slick ☒ Scum ☐ Foaming ☐ Other: minor oil slicks

Algae: On substrate: N ☒ L ☐ S ☐ M ☐ E In water column: N ☒ L ☐ S ☐ M ☐ E

Macrophytes: Emergent: N ☒ L ☐ S ☐ M ☐ E Submerged: N ☒ L ☐ S ☐ M ☐ E

Impacts: Human N ☒ L ☐ S ☐ M ☐ E Pastoral animals N ☒ L ☐ S ☐ M ☐ E Non-pastoral animals N ☒ L ☐ S ☐ M ☐ E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] [] [] %	Run [] [] [] %	Macrophytes [] [] [] % in: R [] [] [] % E [] [] [] %
Pool (rocky-K) [] [] [] %	Pool (sandy-S) [] [] [] %	K [] [] [] % S [] [] [] % Run [] [] [] %
Dry [] [] [] %	Riffle + Run + Pool + Dry = 100%	Algae [] [] [] % in: R [] [] [] % E [] [] [] %
Edge [] [] [] %		K [] [] [] % S [] [] [] % Run [] [] [] %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] [] [] %

COMMENTS:

(Office use only) Entered into Hydsys [] [] [] by [] [] [] Checked on [] [] [] by [] [] []
 Entered into AQEIS [] [] [] by [] [] [] Checked on [] [] [] by [] [] []

026 1-2R

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: grazing

Adjacent landuse: Left bank: Score 2 Type NIC Right bank: Score 2 Type NIC

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 10 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types)

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10 m Right bank 15 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 10 m Right bank 15 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [B24 | 1-3] Sample Number [| | | | | | | | | | | | | | | |]
 Site Name Macintyre Brook
 Date [15 / 12 / 2010] Project Name _____
 Time (24 hrs) [09 : 00] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | | |] Received [| | | | | | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[125 | 6.1] <u>125.4</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[23 | 1] <u>23.1</u>	[ | | ]	2080.5
pH	[7 | 56] <u>7.56</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	[15 | 41] <u>15.4</u>	[ | | ]	2351.5
Turbidity NTU	[ | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: nil
 Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other _____
 Algae: On substrate: N ☒ L ☐ S ☐ M ☐ E In water column: N ☒ L ☐ S ☐ M ☐ E
 Macrophytes: Emergent: N ☒ L ☐ S ☐ M ☐ E Submerged: N ☒ L ☐ S ☐ M ☐ E
 Floating: N ☒ L ☐ S ☐ M ☐ E Azolla
 Impacts: Human N ☒ L ☐ S ☐ M ☐ E Pastoral animals N ☒ L ☐ S ☐ M ☐ E Non-pastoral animals N ☒ L ☐ S ☐ M ☐ E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run 100 %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] %
 Dry [| |] % Riffle + Run + Pool + Dry = 100%
 Edge [| |] %
 Edge is % of habitat available to sample from L and R banks
 Macrophytes [| |] % in: R _____ % E _____ %
 K _____ % S _____ % Run _____ %
 Algae [| |] % in: R _____ % E _____ %
 K _____ % S _____ % Run _____ %
 Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

BLG 1-3.

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse: <u>grazing</u>											
Adjacent landuse: Left bank: Score <u>2</u> Type <u>NIC, MG</u> Right bank: Score <u>2</u> Type <u>NIC, MG</u>											
0. Urban/semi-urban, industrial						3. Light grazing, vegetation clearing					
1. Irrigated cropping, intensive forestry or heavy grazing						4. Natural					
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:		None	<u>Little</u>	Some	Moderate	Extensive					
Water colour:		Clear	<u>Green</u>	<u>Opaque</u>	Tannin	Other					
Sediment deposits:		None	<u>Sand</u>	<u>Silt</u>	Other						
Algae: On substrate:		<u>None</u>	<u>Little</u>	Some	Moderate	Extensive					
In water column:		<u>None</u>	<u>Little</u>	Some	Moderate	Extensive					
Water odour:		<u>No</u>	Yes	Specify							
Substrate odour:		<u>No</u>	Yes	Specify							
Water surface:		<u>Normal</u>	<u>Slick</u>	Scum	Foaming	Other					
Variety of habitat:		<u>Shallow</u>	<u>Deep</u>	Pool	<u>Run</u>	Riffle					
(circle all types)		<u>Undercut bank</u>		LWD	<u>Macrophytes</u>	Other					
Bars: (bed surface protruding from normal water level and forming a bar) <u>0.5</u> %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		<u>Low</u>	Moderate	High	Flood						
(dry/isolated)		(=watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank <u>20</u> m				Right bank <u>15</u> m					
* Bare ground	None	<u>Little</u>	Some	Moderate	Extensive						
* Grass	None	<u>Little</u>	<u>Some</u>	Moderate	Extensive						
* Shrubs	None	<u>Little</u>	Some	Moderate	Extensive						
* Trees <10 m high	None	<u>Little</u>	Some	Moderate	Extensive						
* Trees >10 m high	None	<u>Little</u>	<u>Some</u>	Moderate	Extensive						
Presence of exotic riparian species	None	<u>Little</u>	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank <u>20</u> m				Right bank <u>10</u> m					
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	<u>L</u>	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	<u>S</u>	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	<u>S</u>	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E
Comments:											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[8 2 6 0 0 1 6]	Sample Number	[]																												
Site Name	[Mainly re Brook]																														
Date	[1 5 / 1 2 / 0 0 2 0]	Project Name	[]																												
Time (24 hrs)	[0 8 : 1 0 0]	QHSS Analysis No.	[]																												
Project Code	[]	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[267.84 ]	[ | | ]	2010.5
Water Temperature °C	[22.4 ]	[ | | ]	2080.5
pH	[7.74 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[5.00 ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature °C	[ | | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | | | | ]	[ | | ]	140.0

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 %		Water Odour: nil																
Water Surface Condition:		Normal	Slick	Scum	Foaming	Other												
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E	not us.					
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[<u>1</u> | <u>0</u>] %	Macrophytes	[ | | ] %	in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %			K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] %	in: R	 %	E	 %
Edge	[ | | ] %					K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %				

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

BL 1-6

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: agricultural / irrigated grazing

Adjacent landuse: Left bank: Score 1 Type IC, HG Right bank: Score 2 Type IC, HG

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other Litter
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 30+ m Right bank 10+ m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
 Width of continuous tree zone from bank: Left bank 15 m Right bank 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

B24 1.7



Queensland
Government
Natural Resources
and Mines

WATER QUALITY SAMPLING FIELD SHEET

Site Number [B24 1.7] Sample Number [Hydrom + Lab] [| | | | |]
 Site Name [Macintyre Brook]
 Date [14/12/2020] Project Name [B24 SWQ]
 Time (24 hrs) [14:20] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted [| | | | |]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1256.8] 561 0.13 ppt	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[23.1]	[ | | ]	2080.5
pH	[7.43]	[ | | ]	2100.5
Dissolved O_2 mg/l	[8.03] 94.0%	[ | | ]	2351.5
Turbidity NTU	[ | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☒ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain [] Cloud cover [] Wind []
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20% Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] % Run [] % Macrophytes [| |] % in: R [] % E [] %
 Pool (rocky-K) [] % Pool (sandy-S) [| |] % K [] % S [] % Run [] %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R [] % E [] %
 Edge [| |] % (Ford) dls. K [] % S [] % Run [] %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: [Ford (Ford?) across Brook]
 (Office use only) Entered into HydSys [] / [] / [] by [] Checked on [] / [] / [] by []
 Entered into AQEIS [] / [] / [] by [] Checked on [] / [] / [] by []

1526 1-7

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: grazing

Adjacent landuse: Left bank: Score 2 Type NI grazing Right bank: Score 2 Type NI grazing

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2 Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other NO VIZ

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify Not exposed

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) Found %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types)

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 15 m Right bank 15 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive 2 weeds ground

Width of continuous tree zone from bank: Left bank 15 m Right bank 15 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Najas</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

[illegible]

WATER QUALITY

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading:		% Water Odour:																
Water Surface Condition:		Normal					Slick		Scum		Foaming	Other						
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R %	E %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[1 | 0 | 0] %		K %	S %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R %	E %
Edge	[ | | ] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %	Run %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by _____ Checked on / / by _____
Entered into AQEIS / / by _____ Checked on / / by _____

BUG 2 11.

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Grazing / P. m. m.

Adjacent landuse: Left bank: Score 2 Type Nic, m. m. Right bank: Score 2 Type Nic, m. m.

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify methane (a breakdown)

Water surface: Normal Slick Scum Foaming Other U. m. m. (under a glass)

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 5 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 30+ m Right bank 15 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 30+ m Right bank 5 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	<u>N</u>	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	<u>L</u>	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	<u>L</u>	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	<u>L</u>	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	<u>L</u>	S	M	E	Common Rush (<i>Juncus</i>)	N	<u>L</u>	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	<u>L</u>	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[B26 1-18]	Sample Number	[ | | | | | | | | | | | | | | | | ]
Site Name	Yannand Waterway	Project Name	
Date	[14/12/2010]	QHSS Analysis No.	[ | | | | | ]
Time (24 hrs)	[ | : | ]	Submitted	[A B C D E F G H I J K L M N]
Project Code	[ | | | | | ]	Received	[ | | | | | ]
Run Code	[ | | | | | ]		
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude see map Longitude see map
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | . | ]	[ | | | ]	2080.5
pH	[ | . | ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[ | . | ]	[ | | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ]	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | . | | ]	[ | | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

WATER QUALITY SAMPLING FIELD SHEET

Site Number [826 | 116]	Sample Number [ | | | | | | | | | | | | | ]
Site Name _____	
Date [ | | / | | / | | ]	Project Name _____
Time (24 hrs) [ | : | ]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [ | | | | ]	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$ [ | | | ]	[ | | ]	2080.5
pH	[ | | | ]	[ | | ]	2100.5
Dissolved O_2	mg/l [ | | | ]	[ | | ]	2351.5
Turbidity	NTU [ | | | ]	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | | ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | | | ]	[ | | ]	2046.5
Velocity	m/s [ | | | | ]	[ | | ]	240.0
Gauge Height	m [ | | | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading:		% Water Odour:																
Water Surface Condition:		Normal		Slick			Scum			Foaming		Other						
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %		K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R	 %	E	 %
Edge	[ | | ] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %		Run	 %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [BZG 1.18]	Sample Number [ | | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [15/12/2020]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [13:45]	Submitted [A B C D E F G H I J K L M N]
Project Code [ | | | | | ]	Received [ | | | | | ]
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____

Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

B2G 1.18

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:

Left bank m

Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank:

Left bank m

Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [B26 1. 2012] Sample Number [| | | | | | | | | | | | | |]
 Site Name [N. 101 Creek] Project Name _____
 Date [15/12/2012] Time (24 hrs) [19:00] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ]	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | | ]	[ | | | ]	2080.5
pH	[ | | | ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[ | | | ]	[ | | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | ]	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | | ]	2046.5
Velocity m/s	[ | | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | | | ]	[ | | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 Edge [| |] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____
 (Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____
 Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

BLC 1-2012

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion:	None	Little	Some	Moderate	Extensive
Water colour:	Clear	Green	Opaque	Tannin	Other
Sediment deposits:	None	Sand	Silt	Other	
Algae: On substrate:	None	Little	Some	Moderate	Extensive
In water column:	None	Little	Some	Moderate	Extensive
Water odour:	No	Yes	Specify		
Substrate odour:	No	Yes	Specify		
Water surface:	Normal	Slick	Scum	Foaming	Other
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
(circle all types)	Undercut bank		LWD	Macrophytes	Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow	Low	Moderate	High	Flood
(dry/isolated)	(<watermark)	(=watermark)	(>watermark)	

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:		Left bank	m	Right bank	m
* Bare ground	None	Little	Some	Moderate	Extensive
* Grass	None	Little	Some	Moderate	Extensive
* Shrubs	None	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive
Width of continuous tree zone from bank:		Left bank	m	Right bank	m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [B2G11123] Sample Number [| | | | | | | | | | | | | |]
 Site Name WATER QUALITY SAMPLING
 Date [15/12/2020] Project Name _____
 Time (24 hrs) [14:00] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | |] Submitted [| | | | | | | | | | | | | |]
 Run Code [| | | | | |] Received [| | | | | | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[ | | | | ]	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | | ]	2080.5
pH	[ | | . | ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | | ]	2351.5
Turbidity NTU	[ | | | | ]	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Rifle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 Edge [| |] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

BL 1.23

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[B261-24]	Sample Number	[ | | | | | | | | | | | | | | | | ]
Site Name			
Date	[16/12/2022]	Project Name	
Time (24 hrs)	[ | : | ]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | | . | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

826 1.24 [no access]

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types)

Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:

Left bank m

Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m

Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

BLG 122

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types),

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E

..... N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[B26 | 1.29]	Sample Number	[ | | | | | | | | | | | | | | | | ]
Site Name			
Date	[15 / 12 / 2014]	Project Name	
Time (24 hrs)	[15:00]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Rifle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Rifle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____

Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

B26 1.29

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types)

Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types)

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E

..... N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number 131261130 Sample Number [| | | | | | | | | | | | | | | |]
 Site Name _____
 Date 15/12/2010 Project Name _____
 Time (24 hrs) 15:20 QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | | | | | | | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Rifle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 Edge [| |] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

B24 1-30

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E

..... N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number B2G 1-32 Sample Number [| | | | | | | | | | | | | | | |]
 Site Name _____
 Date [15/12/2020] Project Name _____
 Time (24 hrs) [| : |] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | |] Run Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | | | | | | | | |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | | ]	2080.5
pH	[ | | . | ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 Edge [| |] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

026 1-32

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial						3. Light grazing, vegetation clearing					
1. Irrigated cropping, intensive forestry or heavy grazing						4. Natural					
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:		None		Little		Some		Moderate		Extensive	
Water colour:		Clear		Green		Opaque		Tannin		Other	
Sediment deposits:		None		Sand		Silt		Other			
Algae: On substrate:		None		Little		Some		Moderate		Extensive	
In water column:		None		Little		Some		Moderate		Extensive	
Water odour:		No		Yes		Specify					
Substrate odour:		No		Yes		Specify					
Water surface:		Normal		Slick		Scum		Foaming		Other	
Variety of habitat:		Shallow		Deep		Pool		Run		Riffle	
(circle all types)		Undercut bank				LWD		Macrophytes		Other	
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		Low		Moderate		High		Flood			
(dry/isolated)		(<watermark)		(=watermark)		(>watermark)					
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m				Right bank m					
* Bare ground		None		Little		Some		Moderate		Extensive	
* Grass		None		Little		Some		Moderate		Extensive	
* Shrubs		None		Little		Some		Moderate		Extensive	
* Trees <10 m high		None		Little		Some		Moderate		Extensive	
* Trees >10 m high		None		Little		Some		Moderate		Extensive	
Presence of exotic riparian species		None		Little		Some		Moderate		Extensive	
Width of continuous tree zone from bank:		Left bank m				Right bank m					
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla		N		L		S		M		E	
Water Ribbon (<i>Triglochin</i>)		N		L		S		M		E	
Duckweed		N		L		S		M		E	
Water Lettuce (<i>Pistia stratiotes</i>)		N		L		S		M		E	
Hornwort (<i>Ceratophyllum</i>)		N		L		S		M		E	
Water Primrose (<i>Ludwigia</i>)		N		L		S		M		E	
Stoneworts (<i>Chara</i> or <i>Nitella</i>)		N		L		S		M		E	
Sedge (<i>Cyperus</i>)		N		L		S		M		E	
Hydrilla		N		L		S		M		E	
Common Rush (<i>Juncus</i>)		N		L		S		M		E	
Water Milfoil (<i>Myriophyllum</i>)		N		L		S		M		E	
Cumbungi (<i>Typha</i>)		N		L		S		M		E	
Pondweeds (<i>Potamogeton</i>)		N		L		S		M		E	
Slender Knotweed (<i>Persicaria</i>)		N		L		S		M		E	
Ribbonweed (<i>Vallisneria</i>)		N		L		S		M		E	
.....		N		L		S		M		E	
.....		N		L		S		M		E	
Exotic											
Water Hyacinth (<i>Eichhornia</i>)		N		L		S		M		E	
Alligator Weed (<i>Alternanthera</i>)		N		L		S		M		E	
Salvinia		N		L		S		M		E	
Elodea		N		L		S		M		E	
Para Grass (<i>Urochloa</i>)		N		L		S		M		E	
Egeria		N		L		S		M		E	
.....		N		L		S		M		E	
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [826 1-33] Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date [| / | / | | |] Project Name _____
 Time (24 hrs) [| : |] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | . | ]	[ | | ]	2080.5
pH	[ | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 K _____ % S _____ % Run _____ %
 Edge [| |] % Blanketing silt [| |] %
 Edge is % of habitat available to sample from L and R banks

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

B26 1-33

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [1325 / 139]	Sample Number []																														
Site Name _____																															
Date [16 / 12 / 2020]	Project Name _____																														
Time (24 hrs) [:]	QHSS Analysis No. []																														
Project Code []	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>Submitted</th> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th> </tr> <tr> <th>Received</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	Submitted	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Received														
Submitted		A	B	C	D	E	F	G	H	I	J	K	L	M	N																
Received																															
Run Code []																															
Party [] [] []																															

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$ [ | | | | ]	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$ [ | | • | ]	[ | | ]	2080.5
pH	[ | | • | ]	[ | | ]	2100.5
Dissolved O_2	mg/l [ | | • | ]	[ | | ]	2351.5
Turbidity	NTU [ | | | | ]	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | • | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | • | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | • | ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | • | | ]	[ | | ]	2046.5
Velocity	m/s [ | • | | ]	[ | | ]	240.0
Gauge Height	m [ | | | • | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | • | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading:		% Water Odour:																								
Water Surface Condition:		Normal					Slick			Scum			Foaming			Other										
Algae:	On substrate:	N	L	S	M	E	In water column:					N	L	S	M	E										
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:					N	L	S	M	E										
	Floating:	N	L	S	M	E																				
Impacts:	Human	N	L	S	M	E	Pastoral animals					N	L	S	M	E	Non-pastoral animals					N	L	S	M	E
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)									

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[102511 | 40]	Sample Number	[ | | | | | | | | | | | | ]
Site Name			
Date	[16 / 12 / 2020]	Project Name	
Time (24 hrs)	[ | : | ]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____

Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:					
Adjacent landuse: Left bank: Score		Type		Right bank: Score	
		Type			
0. Urban/semi-urban, industrial			3. Light grazing, vegetation clearing		
1. Irrigated cropping, intensive forestry or heavy grazing			4. Natural		
2. Non-irrigated cropping, moderate grazing					
Local catchment erosion:	None	Little	Some	Moderate	Extensive
Water colour:	Clear	Green	Opaque	Tannin	Other
Sediment deposits:	None	Sand	Silt	Other .....	.....
Algae: On substrate:	None	Little	Some	Moderate	Extensive
In water column:	None	Little	Some	Moderate	Extensive
Water odour:	No	Yes	Specify		
Substrate odour:	No	Yes	Specify		
Water surface:	Normal	Slick	Scum	Foaming	Other
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
(circle all types)	Undercut bank		LWD	Macrophytes	Other
Bars: (bed surface protruding from normal water level and forming a bar) %					
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).					
	No flow	Low	Moderate	High	Flood
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)	

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:		Left bank m		Right bank m	
* Bare ground	None	Little	Some	Moderate	Extensive
* Grass	None	Little	Some	Moderate	Extensive
* Shrubs	None	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive
Width of continuous tree zone from bank:		Left bank m		Right bank m	
None = 0%	Little = 1-10%	Some = 10-50%	Moderate = 50-75%	Extensive >75%	* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

○

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain Cloud cover Wind

Comments: *Wane today*

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS:

DU506405.ai
ar176211200002

BUG 1.42

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Cropping

Adjacent landuse: Left bank: Score 1 Type LC Right bank: Score 2 Type LC

0. Urban/semi-urban, industrial
 1. Irrigated cropping, intensive forestry or heavy grazing
 2. Non-irrigated cropping, moderate grazing
 3. Light grazing, vegetation clearing
 4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other W/S from erosion

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 20 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 5 m Right bank 2 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B24 1.2</u>	Project Name <u>Inland Rail</u>
Date [<u>11/01/2021</u>]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [<u>11:45</u>]	Submitted [ | | | | | ]
Project Code [ | | | | | ]	Received [ | | | | | ]
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[<u>340</u>] <u>spec 315</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[<u>29.1</u> ]	[ | | ]	2080.5
pH	[<u>7.84</u> ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[<u>7.18</u>] <u>103.5%</u>	[ | | ]	2351.5
Turbidity NTU	[<u>138.1</u>] <u>42</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☒ Comments: _____
 Today: Rain N/A Cloud cover None Wind None
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 70 % Water Odour: none

Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other _____

Algae: On substrate: ☒ L ☐ S ☐ M ☐ E In water column: N L S M E no visible

Macrophytes: Emergent: N L ☒ S M E Submerged: N L S M E no vis

Impacts: Human ☒ L S M E Pastoral animals ☒ L S M E Non-pastoral animals ☒ L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [<u>100</u>] %	Macrophytes [<u>100</u>] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [<u>100</u>] % in: R _____ % E _____ %
Edge [<u>214</u>] %	Edge is % of habitat available to sample from L and R banks	K _____ % S _____ % Run _____ %
		Blanketing silt [ | | ] % <u>no vis</u>

COMMENTS: sample

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Grazing

Adjacent landuse: Left bank: Score 1 Type 2 Right bank: Score 2 Type 2

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 40 m Right bank 10 m

* Bare ground None Little Some Moderate Extensive
* Grass None Little Some Moderate Extensive
* Shrubs None Little Some Moderate Extensive
* Trees <10 m high None Little Some Moderate Extensive
* Trees >10 m high None Little Some Moderate Extensive
Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | ]
Site Name	B2A 1.2R		
Date	19/01/2021		
Time (24 hrs)	17:38		
Project Name	Inland Park		
Project Code	[ | | | | | ]	QHSS Analysis No.	[ | | | | | ]
Run Code	[ | | | | | ]	Submitted	A B C D E F G H I J K L M N
Party	[ | | ] [ | | ] [ | | ]	Received	

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	342.14 JPC 314.4	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	21.17	[ | | ]	2080.5
pH	7.19	[ | | ]	2100.5
Dissolved O_2 mg/l	7.10 105%	[ | | ]	2351.5
Turbidity NTU	4.3	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	14.1	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____
 Today: Rain N/A Cloud cover None Wind None
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 40 % Water Odour: None

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [<u>100</u>] %	Run [ | | ] %	Macrophytes [<u>10</u>] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [<u>10</u>] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % <u>not visible</u>

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: grazing

Adjacent landuse: Left bank: Score 2 Type Right bank: Score 2 Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 40 m Right bank 10 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2A 1.3</u>	Project Name <u>land rail</u>
Date <u>[20/01/2021]</u>	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) <u>[09:00]</u>	Submitted
Project Code [ | | | | | ]	Received
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE (E) (SE) S SW W NW Datum: _____

WATER QUALITY

all - 90.0mV

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	<u>[165.14]</u> <u>sp-164.9</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	<u>[25.2]</u>	[ | | ]	2080.5
pH	<u>[16.1718]</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>[21.4]</u> <u>29.2%</u>	[ | | ]	2351.5
Turbidity NTU	<u>[71.31]</u> <u>151 = 158.6</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: _____
 Today: Rain yes no Cloud cover none Wind none
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 40 % Water Odour: none
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: (N) L S M E In water column: (N) L S M E
 Macrophytes: Emergent: (N) L (S) M E Submerged: (N) L S M E
 Floating: (N) L S M E
 Impacts: Human N L (S) M E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run <u>[110]</u> %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % <u>non visible</u>

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: pastoral

Adjacent landuse: Left bank: Score 1 Type 0. Urban/semi-urban, industrial Right bank: Score 1 Type 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10 m Right bank 10 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 5 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Irrigated cropping

Adjacent landuse: Left bank: Score 1 Type 1 Right bank: Score 1 Type 1

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10 m Right bank 5 m

	None	Little	Some	Moderate	Extensive
* Bare ground	<u>None</u>	Little	Some	Moderate	Extensive
* Grass	None	Little	Some	Moderate	<u>Extensive</u>
* Shrubs	None	Little	<u>Some</u>	Moderate	Extensive
* Trees <10 m high	None	<u>Little</u>	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	<u>Moderate</u>	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	<u>Extensive</u>

Width of continuous tree zone from bank: Left bank 5 m Right bank 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | | | ]
Site Name <u>B26 107</u>	
Date [11/9/01 1/20/21]	Project Name <u>Inland Rail</u>
Time (24 hrs) [114:010]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY									
Parameter		Value		Quality		Variable			
Conductivity		$\mu\text{S/cm@25}^\circ\text{C}$	[315|3|0|16]	[ | | ]		2010.5			
Water Temperature		$^\circ\text{C}$	[30|0|1|1]	[ | | ]		2080.5			
pH			[17|0|2|9]	[ | | ]		2100.5			
Dissolved O_2		mg/l	[17|0|2|8]	[ | | ]		2351.5			
Turbidity		NTU	[8|0|0|3|8]	[ | | ]		2030.5			
Air Temperature		$^\circ\text{C}$	[ | | 0 | ]	[ | | ]		2065.5			
Total Alkalinity		mg/l CaCO_3	[ | | | 0 | ]	[ | | ]		2113.5			
Phenol Alkalinity		mg/l CaCO_3	[ | | | 0 | ]	[ | | ]		2114.5			
Transparency (secchi)		m	[ | | 0 | ]	[ | | ]		2046.5			
Velocity		m/s	[ | 0 | ]	[ | | ]		240.0			
Gauge Height		m	[ | | | 0 | ]	[ | | ]		100.0			
Discharge		m^3/s}	[ | | | | 0 | ]	[ | | ]		140.0			
Discharge Method: measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs									

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *N/A* Cloud cover *None* Wind *none*
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 %		Water Odour: none	
Water Surface Condition: Normal		Slick	Scum
		Foaming	Other
Algae:	On substrate:	N L S M E	In water column: N L S M E
Macrophytes:	Emergent:	N L S M E	Submerged: N L S M E
	Floating:	N L S M E	
Impacts: Human	N L S M E	Pastoral animals	N L S M E
		Non-pastoral animals	N L S M E
N = none		L = 1-10% (little)	S = 10-50% (some)
		M = 50-75% (moderate)	E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [100] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae down stream [100] % in: R % E %
Edge [100] %		edges K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % 2/12

COMMENTS: sampled downstream of pond

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: irrigated cropping

Adjacent landuse: Left bank: Score 1 Type 1 Right bank: Score 1 Type 1

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 30 m Right bank 10 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 30 m Right bank 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2A 1.11</u>	Project Name <u>Inland Rail</u>
Date <u>09/12/2011</u>	QHSS Analysis No. [ | | | | ]
Time (24 hrs) <u>[10:30]</u>	Submitted
Project Code [ | | | | ]	Received
Run Code [ | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[171.50] <u>165.9</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[27.19 ]	[ | | ]	2080.5
pH	[7.12 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[5.95] <u>76.4%</u>	[ | | ]	2351.5
Turbidity NTU	[2.1] <u>134.42</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain N/A Cloud cover none Wind none
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 % Water Odour: none

Water Surface Condition: Normal ☐ Slick ☐ Scum ☒ Foaming ☐ Other _____

Algae: On substrate: ☒ L ☐ S ☐ M ☐ E In water column: ☒ L ☐ S ☐ M ☐ E

Macrophytes: Emergent: ☐ L ☒ S ☐ M ☐ E Submerged: ☒ L ☐ S ☐ M ☐ E

Floating: ☐ L ☒ S ☐ M ☐ E

Impacts: Human ☐ L ☒ S ☐ M ☐ E Pastoral animals ☒ L ☐ S ☐ M ☐ E Non-pastoral animals ☒ L ☐ S ☐ M ☐ E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [71.9] %	Macrophytes [31.9] % in: R [ | | ] % E [ | | ] %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [13.0] %	K [ | | ] % S [ | | ] % Run [ | | ] %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [1.5] % in: R [ | | ] % E [ | | ] %
Edge [ | | ] %		K [ | | ] % S [ | | ] % Run [ | | ] %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % <u>non visible</u>

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: irrigated cropping
 Adjacent landuse: Left bank: Score ... Type ... Right bank: Score ... Type ...

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %**Flow level:** (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m same
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
Width of continuous tree zone from bank: Left bank m Right bank m same
 None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | | | | |]
 Site Name B2G SW 1-14
 Date [19/01/2012] Project Name Inland Rail
 Time (24 hrs) [12:30] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | | | | | | | | | | | |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3 [ | | | | ]		[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3 [ | | | | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | | | ]		[ | | ]	2046.5
Velocity m/s [ | | . | ]		[ | | ]	240.0
Gauge Height m [ | | | | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments:

Today: Rain Cloud cover Wind
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 K % S % Run %
 Edge [| |] % Blanketing silt [| |] %
 Edge is % of habitat available to sample from L and R banks

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

3. Light grazing, vegetation clearing

4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae:	On substrate:	None	Little	Some	Moderate	Extensive
--------	---------------	------	--------	------	----------	-----------

In water column:	None	Little	Some	Moderate	Extensive
------------------	------	--------	------	----------	-----------

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface:	Normal	Slick	Scum	Foaming	Other
-----------------------	--------	-------	------	---------	-----------------

Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
----------------------------	---------	------	------	-----	--------

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground	None	Little	Some	Moderate	Extensive
---------------	------	--------	------	----------	-----------

	None	Little	Some	Moderate	Extensive
* Grass					

* Shrubs	None	Little	Some	Moderate	Extensive
----------	------	--------	------	----------	-----------

* Trees <10 m high	None	Little	Some	Moderate	Extensive
--------------------	------	--------	------	----------	-----------

* Trees >10 m high	None	Little	Some	Moderate	Extensive
--------------------	------	--------	------	----------	-----------

	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
--------	---	---	---	---	---	------------------------------------	---	---	---	---	---

	N	L	S	M	E		N	L	S	M	E
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					

Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
-----------------------------------	---	---	---	---	---	------------------------------------	---	---	---	---	---

Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
---	---	---	---	---	---	--------------------------	---	---	---	---	---

	N	L	S	M	E		N	L	S	M	E
Hydrilla						Common Rush (<i>Juncus</i>)					

Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
---------------------------------------	---	---	---	---	---	---------------------------	---	---	---	---	---

Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
----------------------------------	---	---	---	---	---	--	---	---	---	---	---

	N					L					S					M					E				
Ribbonweed (<i>Vallisneria</i>)																									

N	L	S	M	E		N	L	S	M	E
---	---	---	---	---	--	---	---	---	---	---

Exotic

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
--------------------------------------	---	---	---	---	---	---	---	---	---	---	---

Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
----------	---	---	---	---	---	--------	---	---	---	---	---

	N	L	S	M	E		N	L	S	M	E
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					

	N	L	S	M	E		N	L	S	M	E
--	---	---	---	---	---	--	---	---	---	---	---

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Sample Number [| | | | | | | | | | |]

Date [20/01/2021]

Project Name Inland Lake

Time (24 hrs) [11 : 45]

QHSS Analysis No. [| | | | |]

Project Code [| | | | |]

Run Code [| | | | | |]

Submitted

[illegible]

Party	[1 1]	[1 1]	[1 1]
Democrat	1	1	1
Republican	1	1	1
Other	1	1	1

Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

ORP 163.9 mV

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [198 | 0 | 6] <i>Sp 189.6</i>	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$ [27.5 ]	[ | | ]	2080.5
pH	[7.2 ]	[ | | ]	2100.5
Dissolved O ₂	mg/l [5.1 | 9] <i>65.5%</i>	[ | | ]	2351.5
Turbidity	NTU [10 | 18] <i>YSI 181-25</i>	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | . | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO ₃ [ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO ₃ [ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | . | | ]	[ | | ]	2046.5
Velocity	m/s [ | . | | ]	[ | | ]	240.0
Gauge Height	m [ | | . | | ]	[ | | ]	100.0
Discharge	m ³ /s [ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [\] / No [] Comments:

Today: Rain n/a Cloud cover ... slight cover Wind ... slight breeze
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: (N) L S M E In water column: (N) L S M E

Macrophytes: Emergent: ~~L~~ S M E Submerged: N L S M E

Floating: ☒ (N) ☐ L ☐ S ☐ M ☐ E

Impacts: Human N L S M E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] % Run [70] % Macrophytes [20] % in: R % E %

Pool (rocky-K) [] % Pool (sandy-S) [30] % K % S % Run %

Dry [] [] [] % Riffle + Run + Pool + Dry = 100% Algae [] [] [] % in: R % E %

Edge	[	|	|	]	%	K..... %	S..... %	Run..... %
------	---	--	--	---	---	----------	----------	------------

Edge	[ | | ] %		K..... % S..... % Run..... %
------	-----------------	--	------------------------------

Edge is % of habitat available to sample from L and R banks	Blanketing silt	[	|	|	]	%	none visible
---	-----------------	---	--	--	---	---	--------------

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: irrigated

Adjacent landuse: Left bank: Score 3 Type Right bank: Score 1 Type 3. Light grazing, vegetation clearing

0. Urban/semi-urban, industrial
 1. Irrigated cropping, intensive forestry or heavy grazing
 2. Non-irrigated cropping, moderate grazing
 3. Light grazing, vegetation clearing
 4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
 No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground	<u>None</u>	Little	Some	Moderate	Extensive
* Grass	None	Little	Some	Moderate	<u>Extensive</u>
* Shrubs	None	<u>Little</u>	Some	Moderate	Extensive
* Trees <10 m high	None	Little	<u>Some</u>	Moderate	Extensive
* Trees >10 m high	None	Little	<u>Some</u>	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	<u>Moderate</u>	Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

WATER QUALITY SAMPLING FIELD SHEET

Site Number [3216151W1118] Sample Number [| | | | | | | | | | | | | |]
 Site Name [1.18]
 Date [09/01/2011] Project Name [Inland fall]
 Time (24 hrs) [11:31] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[120187] <i>spc 195.5</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[218.18]	[ | | ]	2080.5
pH	[7.21]	[ | | ]	2100.5
Dissolved O_2 mg/l	[131.45] <i>44.7%</i>	[ | | ]	2351.5
Turbidity NTU	[3615.15] <i>451 TSS broken</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from ☐ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____
 Today: Rain *N/A* Cloud cover *None* Wind *slight breeze*
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *20* % Water Odour: *none*
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [109] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [150] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] % *N/A*

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Pastoral

Adjacent landuse: Left bank: Score 1 Type 1 Right bank: Score 1 Type 1

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1 Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other none observed

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 2 m Right bank 2 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 10 m Right bank 5 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name B2C 1-20																													
Date [19 01 12 01 21]	Project Name Inland Rail																												
Time (24 hrs) [10:45]	QHSS Analysis No. []																												
Project Code []																													
Run Code []	Submitted																												
Party [] [] []	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																
	Received																												

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [ | | | | ]	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$ [ | | • | ]	[ | | ]	2080.5
pH	[ | | • | ]	[ | | ]	2100.5
Dissolved O_2	mg/l} [ | | • | ]	[ | | ]	2351.5
Turbidity	NTU [ | | | ]	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | • | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | • ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | • ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | | • ]	[ | | ]	2046.5
Velocity	m/s} [ | • | | ]	[ | | ]	240.0
Gauge Height	m [ | | | • | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | • | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:																					
Water Surface Condition: Normal Slick Scum Foaming Other																					
Algae:		On substrate:		N	L	S	M	E	In water column:		N	L	S	M	E						
Macrophytes:		Emergent:		N	L	S	M	E	Submerged:		N	L	S	M	E						
		Floating:		N	L	S	M	E													
Impacts:		Human	N	L	S	M	E	Pastoral animals		N	L	S	M	E	Non-pastoral animals		N	L	S	M	E
		N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)											

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R %	E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K %	S %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R %	E %
Edge [ | | ] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %	Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2A 1-23</u>	
Date <u>1400 (12/01/11)</u>	Project Name <u>Inland Rail</u>
Time (24 hrs) <u>11:31a</u>	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: sample

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[118 | 141 | 19] <u>SIC 186.8</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[24 | 5 ]	[ | | ]	2080.5
pH	[16 | 7 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[10 | 09] <u>101%</u>	[ | | ]	2351.5
Turbidity NTU	[119 | 102] <u>101% 256.67</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____

Today: Rain N/A Cloud cover Slight Wind none

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [100] %	Macrophytes [ | 0] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | 0] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % <u>none visible</u>

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: semi urban golf course + paddock
Adjacent landuse: Left bank: Score 2 Type 2 Right bank: Score 3 Type 3
 0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
 No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m
 None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B29 1-24</u>	
Date <u>20/01/2021</u>	Project Name <u>Inland fail</u>
Time (24 hrs) <u>14:15</u>	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	<u>218.18</u> <u>spc 19.2</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	<u>32.16</u>	[ | | ]	2080.5
pH	<u>18.418</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>11.40</u> <u>157.3%</u>	[ | | ]	2351.5
Turbidity NTU	<u>22.5</u> <u>jas 326.40</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain N/A Cloud cover Slight over Wind none
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N (L) S M E Submerged: N (L) S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [<u>100</u>] %	Macrophytes [<u>30</u>] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [<u>10</u>] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % <u>none visible</u>

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: pastoral

Adjacent landuse: Left bank: Score 1 Type Right bank: Score 1 Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 1 m Right bank 30 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 1 m Right bank 20 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B29 1-27</u>	
Date <u>20/9/2012</u>	Project Name <u>Inland Rail</u>
Time (24 hrs) <u>16:15</u>	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	<u>255.6</u> <u>sp = 257.1</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	<u>29.10</u>	[ | | ]	2080.5
pH	<u>7.15</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>16.16</u> <u>80.2%</u>	[ | | ]	2351.5
Turbidity NTU	<u>2.13</u> <u>64.5 gasi</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain N/A Cloud cover 30% Wind none
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30% Water Odour: none
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [<u>100</u>] %	Macrophytes [ | <u>0</u>] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | <u>0</u>] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % <u>none visible</u>

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2A 1.29</u>	
Date <u>10/01/2011</u>	Project Name <u>Wang Rail</u>
Time (24 hrs) <u>16:00</u>	QHSS Analysis No. [ | | | | ]
Project Code [ | | | | ]	
Run Code [ | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^{\circ}\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l} [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | | ]		[ | | ]	2030.5
Air Temperature $^{\circ}\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | | ]		[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s} [ | | . | ]		[ | | ]	240.0
Gauge Height m [ | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | | ]		[ | | ]	140.0
Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % **Water Odour:** _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____
 Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name	B2a 1.30		
Date	21/01/2011	Project Name	Inland Rail
Time (24 hrs)	11:30	QHSS Analysis No.	[ | | | | ]
Project Code	[ | | | | ]	Submitted	A B C D E F G H I J K L M N
Run Code	[ | | | | ]	Received	
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

ORP = 132.1 mV

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	244.2	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	24.9	[ | | ]	2080.5
pH	7.18	[ | | ]	2100.5
Dissolved O_2 mg/l	7.18	[ | | ]	2351.5
Turbidity NTU	2.7	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [✓] No [] Comments: _____
 Today: Rain none Cloud cover 50% Wind slight
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0% Water Odour: none
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: (N) L S M E In water column: (N) L S M E
 Macrophytes: Emergent: (N) L S M E Submerged: (N) L S M E
 Floating: (N) L S M E
 Impacts: Human N L S (M) E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [100] %	Macrophytes [ | 1] % in: R [] % E [] %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K [] % S [] % Run [] %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | 1] % in: R [] % E [] %
Edge [ | | ] %		K [] % S [] % Run [] %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % none usable

COMMENTS: _____

(Office use only) Entered into Hydsys [] / [] / [] by [] Checked on [] / [] / [] by []
 Entered into AQEIS [] / [] / [] by [] Checked on [] / [] / [] by []

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: camp ground, weir, deep stream

Adjacent landuse: Left bank: Score 1 Type 1 Right bank: Score 1 Type 1

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 1 m Right bank 3 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name	BDC 1-32		
Date	20/01/2021	Project Name	Inland Kaul
Time (24 hrs)	17:00	QHSS Analysis No.	[ | | | | ]
Project Code	[ | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | ]	Received	[ | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2080.5
pH	[ | | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | ]	[ | | ]	2351.5
Turbidity NTU	[ | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☒ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments:

Today: Rain Cloud cover Wind
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion:	None	Little	Some	Moderate	Extensive
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Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
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(circle all types) Undercut bank LWD Macrophytes Other.....

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:	Left bank m	Right bank m
-------------------------	-----------------------	------------------------

* Bare ground	None	Little	Some	Moderate	Extensive
---------------	------	--------	------	----------	-----------

	None	Little	Some	Moderate	Extensive
* Grass					

* Shrubs	None	Little	Some	Moderate	Extensive
----------	------	--------	------	----------	-----------

* Trees <10 m high	None	Little	Some	Moderate	Extensive
--------------------	------	--------	------	----------	-----------

* Trees >10 m high	None	Little	Some	Moderate	Extensive
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	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
--------	---	---	---	---	---	------------------------------------	---	---	---	---	---

	N	L	S	M	E		N	L	S	M	E
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					

Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
-----------------------------------	---	---	---	---	---	------------------------------------	---	---	---	---	---

Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
---	---	---	---	---	---	--------------------------	---	---	---	---	---

Hydrilla	N	I	S	M	E	Common Rush (<i>Juncus</i>)	N	I	S	M	E
----------	---	---	---	---	---	-------------------------------	---	---	---	---	---

Hydrilla	N	E	S	M	E	Somerset Pond (Cumbung)	N	E	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	E	S	M	E	Cumbungi (<i>Typha</i>)	N	E	S	M	E

Water Milfoil (<i>Myriophyllum</i>)	N	I	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	I	S	M	E
---------------------------------------	---	---	---	---	---	--	---	---	---	---	---

Floodweeds (<i>Flammogelion</i>)	N	E	S	M	E	Shrubland (Hollyhock) (<i>Flammogelion</i>)	N	E	S	M	E
Ribwort (<i>Valeriana</i>)	N	E	S	M	E		N	E	S	M	E

Ribbonweed (<i>Valoniopsis</i>)	N	L	S	M	E	.....	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

[illegible]

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
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Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
----------	---	---	---	---	---	--------	---	---	---	---	---

Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
--------------------------------	---	---	---	---	---	---------------	---	---	---	---	---

Panel C: Sales (over time)											
	N	L	S	M	E		N	L	S	M	E
1990	10	10	10	10	10		10	10	10	10	10
1991	10	10	10	10	10		10	10	10	10	10
1992	10	10	10	10	10		10	10	10	10	10
1993	10	10	10	10	10		10	10	10	10	10
1994	10	10	10	10	10		10	10	10	10	10
1995	10	10	10	10	10		10	10	10	10	10
1996	10	10	10	10	10		10	10	10	10	10
1997	10	10	10	10	10		10	10	10	10	10
1998	10	10	10	10	10		10	10	10	10	10
1999	10	10	10	10	10		10	10	10	10	10
2000	10	10	10	10	10		10	10	10	10	10
2001	10	10	10	10	10		10	10	10	10	10
2002	10	10	10	10	10		10	10	10	10	10
2003	10	10	10	10	10		10	10	10	10	10
2004	10	10	10	10	10		10	10	10	10	10
2005	10	10	10	10	10		10	10	10	10	10
2006	10	10	10	10	10		10	10	10	10	10
2007	10	10	10	10	10		10	10	10	10	10
2008	10	10	10	10	10		10	10	10	10	10
2009	10	10	10	10	10		10	10	10	10	10
2010	10	10	10	10	10		10	10	10	10	10
2011	10	10	10	10	10		10	10	10	10	10
2012	10	10	10	10	10		10	10	10	10	10
2013	10	10	10	10	10		10	10	10	10	10
2014	10	10	10	10	10		10	10	10	10	10
2015	10	10	10	10	10		10	10	10	10	10
2016	10	10	10	10	10		10	10	10	10	10
2017	10	10	10	10	10		10	10	10	10	10
2018	10	10	10	10	10		10	10	10	10	10
2019	10	10	10	10	10		10	10	10	10	10
2020	10	10	10	10	10		10	10	10	10	10
2021	10	10	10	10	10		10	10	10	10	10
2022	10	10	10	10	10		10	10	10	10	10
2023	10	10	10	10	10		10	10	10	10	10
2024	10	10	10	10	10		10	10	10	10	10
2025	10	10	10	10	10		10	10	10	10	10
2026	10	10	10	10	10		10	10	10	10	10
2027	10	10	10	10	10		10	10	10	10	10
2028	10	10	10	10	10		10	10	10	10	10

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003



WATER QUALITY SAMPLING FIELD SHEET

Entered into AQEIS / / by Checked on / / by

DU506405.ai
nr17621) 2/9/2002

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: pastoral

Adjacent landuse: Left bank: Score 1 Type 0. Urban/semi-urban, industrial Right bank: Score 1 Type 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Bannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark) N/A

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 1 m Right bank 1 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 1 m Right bank 1 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E
Comments:											

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2a 1-39</u>	
Date <u>21/01/2021</u>	Project Name <u>Inland Rail</u>
Time (24 hrs) <u>18:30</u>	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY ORP-128.2

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[8 | 8 | 5 | . | 0] <u>SpC = 917.0</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 3 | . | 2 ]	[ | | ]	2080.5
pH	[7 | . | 5 | 9 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 5 | . | 0] <u>58.8%</u>	[ | | ]	2351.5
Turbidity NTU	[1 | 0 | 9 | ] <u>YSI 35.25</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain none Cloud cover 90% over Wind breeze
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [1 | 0 | 0 | ] %	Macrophytes [ | 0 | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | 1 | 0 | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % <u>none visible</u>

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: well camp airport

Adjacent landuse: Left bank: Score 0 Type 0 Right bank: Score 3 Type 3

0. Urban/semi-urban, industrial 3 Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[][][][][][]	Sample Number	[][][][][][][][][][][][][][][][]
Site Name	B2A 1-40		
Date	21/01/2021	Project Name	Inland Rail
Time (24 hrs)	09:00	QHSS Analysis No.	[][][][][][]
Project Code	[][][][][][][]		
Run Code	[][][][][][][]	Submitted	A B C D E F G H I J K L M N
Party	[][][][][][][][][][][][]	Received	

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY				ORP = 106.1	
Parameter	Value	Quality	Variable		
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [58 | 5.10] $\text{SpC} = 609$	[ | | ]	2010.5		
Water Temperature	$^\circ\text{C}$ [22.19]	[ | | ]	2080.5		
pH	[8.139]	[ | | ]	2100.5		
Dissolved O_2	mg/l [10.20] 118.8\%	[ | | ]	2351.5		
Turbidity	15.5 NTU [11.154] $\eta = 20.64$	[ | | ]	2030.5		
Air Temperature	$^\circ\text{C}$ [ | | . | ]	[ | | ]	2065.5		
Total Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2113.5		
Phenol Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2114.5		
Transparency (secchi)	m [ | | . | | ]	[ | | ]	2046.5		
Velocity	m/s} [ | . | | ]	[ | | ]	240.0		
Gauge Height	m [ | | | . | | ]	[ | | ]	100.0		
Discharge	m^3/s} [ | | | | . | | ]	[ | | ]	140.0		

Discharge Method:

measured (gauged) ☐

obtained from rating curve ☐

estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [☒] No [☐] *Comments:*

Today: Rain *no* Cloud cover *90% over* Wind *slight*
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0 % Water Odour: None

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [11000] %	Macrophytes [ | 0] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | 0] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] % none usable

COMMENTS: Culvert, riprap

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: grazing

Adjacent landuse: Left bank: Score 3 Type Right bank: Score 3 Type

0. Urban/semi-urban, industrial
1. Irrigated cropping, intensive forestry or heavy grazing
2. Non-irrigated cropping, moderate grazing
3. Light grazing, vegetation clearing
4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: ~~Clear~~ Green Opaque Tannin Other

Sediment deposits: ~~Gravel~~ Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: ~~None~~ Little Some Moderate Extensive

Water odour: ~~No~~ Yes Specify

Substrate odour: ~~No~~ Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs ~~None~~ Little Some Moderate Extensive

* Trees <10 m high ~~None~~ Little Some Moderate Extensive

* Trees >10 m high ~~None~~ Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name B2C 1-42
 Date 21/01/2011 Project Name Island Rail
 Time (24 hrs) 16:15 QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

ORP = 808

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[8117 | ] <i>SPC = 854</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[22.18 ]	[ | | ]	2080.5
pH	[8.19 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[19.11] <i>106.0%</i>	[ | | ]	2351.5
Turbidity NTU	[10.19] <i>YSI 12.95</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [] Comments: _____
 Today: Rain none Cloud cover 80% Wind none
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 5 % Water Odour: none
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run 100 % Macrophytes [| 0] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| 0] % in: R % E %
 K % S % Run %
 Edge [| |] % Blanketing silt [| |] % none visible
 Edge is % of habitat available to sample from L and R banks

COMMENTS: highly eroded

(Office use only) Entered into Hydsys / / by _____ Checked on / / by _____
 Entered into AQEIS / / by _____ Checked on / / by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: semi urban cleared land

Adjacent landuse: Left bank: Score 0/3 Type Right bank: Score 0/3 Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>BRA 1.03</u>	Project Name <u>Wland Rail</u>
Date <u>21/4/2012</u>	QHSS Analysis No. [ | | | | ]
Time (24 hrs) <u>10:41</u>	Submitted
Project Code [ | | | | ]	Received
Run Code [ | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

TDS: 147.55 mg/L | ORP = 91 mV

Parameter	Value	Quality	Variable
Conductivity $\mu S/cm @ 25^{\circ}C$	<u>230.7</u>	[ | | ]	2010.5
Water Temperature $^{\circ}C$	<u>25.9</u>	[ | | ]	2080.5
pH	<u>7.17</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>6.1</u>	[ | | ]	2351.5
Turbidity NTU	<u>0.4</u>	[ | | ]	2030.5
Air Temperature $^{\circ}C$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l $CaCO_3$	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l $CaCO_3$	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [x] Comments: _____
 Today: Rain NO Cloud cover 10% Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [<u>10</u>] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Crop

Adjacent landuse: Left bank: Score 1 Type IC Right bank: Score 3 Type LG

0. Urban/semi-urban, industrial

1. Irrigated cropping, intensive forestry or heavy grazing

2. Non-irrigated cropping, moderate grazing

3. Light grazing, vegetation clearing

4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 10 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 1 m Right bank 0.5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 8 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | ]
Site Name <u>B2G 1.6</u>	Project Name <u>Inland Rail</u>
Date <u>21/4/2012</u>	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) <u>18:15</u>	
Project Code <u>5102214</u>	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE (E) SE S SW W NW Datum: _____

*B = Before
t = After
calibration*

*pH:
-7.09
-7.00
B-4.04
t-4.01*

*EC:
2402
t-2560*

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	<u>4109</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	<u>25.2</u>	[ | | ]	2080.5
pH	<u>7.1</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>12.7</u>	[ | | ]	2351.5
Turbidity NTU	<u>0.18</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

TDS-26520 mg/L off - 0.359 mV

53.5%

WEATHER: Rain in past week: Yes [] No ☒ Comments: _____
 Today: Rain NO Cloud cover 30% Wind ML
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 80% % Water Odour: None

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: (N) L S M E In water column: (N) L S M E

Macrophytes: Emergent: (N) L S M E Submerged: (N) L S M E

Floating: (N) L S M E

Impacts: Human N L S (M) E Pastoral animals (N) L S M E Non-pastoral animals N (L) S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| | | |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Grass, alga, willows

Adjacent landuse: Left bank: Score 1 Type IC Right bank: Score 3 Type LG (homestead also)

0. Urban/semi-urban, industrial

3 Light grazing, vegetation clearing

1 Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 1 m Right bank 2 m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
 Width of continuous tree zone from bank: Left bank 10 m Right bank 8 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[][][][][][][][]	Sample Number	[][][][][][][][][][][][][][][][][][]																												
Site Name	B2G-SW1-79																														
Date	[2][4][0][2][2][0][2][1]	Project Name	Inland Park																												
Time (24 hrs)	[1][1][5][0] AM	QHSS Analysis No.	[][][][][][][][]																												
Project Code	[][][][][][][][]	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[][][][][][][][]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[][][] [][][] [][][]																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY			
Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [39 | 2 | . | 4]	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$ [26 | . | 1]	[ | | ]	2080.5
pH	[7 | . | 2 | ]	[ | | ]	2100.5
Dissolved O_2	mg/l [4 | . | 1 | 6] 51.3%	[ | | ]	2351.5
Turbidity	NTU [1 | | - | 5 ]	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | . | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | . | | ]	[ | | ]	2046.5
Velocity	m/s} [ | . | | ]	[ | | ]	240.0
Gauge Height	m [ | | | . | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [☒] Comments:

Today: Rain NO Cloud cover 60% Wind moderate

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:																										
Riffle (R)	[	|	|	]	%	Run	[			]	%	Macrophytes	[	|	|	]	% in: R	 %	E	 %						
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	 %	S	 %	Run	 %				
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%												Algae	[	|	|	]	% in: R	 %	E	 %
Edge	[	|	|	]	%														K	 %	S	 %	Run	 %		
Edge is % of habitat available to sample from L and R banks												Blanketing silt										[	|	|	]	%

COMMENTS: _____

 (Office use only) Entered into Hydsys / / by Checked on / / by
 Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: cropping

Adjacent landuse: Left bank: Score 3 Type LG Right bank: Score 1 Type IC (willowden farm)

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 2 m Right bank 1 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 3 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS:

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Light grassy / clean

Adjacent landuse: Left bank: Score 1 Type IC Right bank: Score 3 Type LG

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 20 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 1m m Right bank 2m m

	None	<u>Little</u>	Some	Moderate	Extensive
* Bare ground	None	<u>Little</u>	Some	Moderate	Extensive
* Grass	None	Little	Some	<u>Moderate</u>	Extensive
* Shrubs	None	Little	<u>Some</u>	Moderate	Extensive
* Trees <10 m high	None	Little	<u>Some</u>	Moderate	Extensive
* Trees >10 m high	None	Little	Some	<u>Moderate</u>	Extensive
Presence of exotic riparian species	None	Little	Some	<u>Moderate</u>	Extensive

Width of continuous tree zone from bank: Left bank 4 m Right bank 6 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Comments:											

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WEATHER: *Rain in past week:* Yes [] No [] Comments:
Today: Rain Cloud cover Wind
 Comments:

Shading:		% Water Odour:																
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R %	E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K %	S %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R %	E %
Edge [] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %	Run %

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pr17621) 2/9/2002

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural 2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae:	On substrate:	None	Little	Some	Moderate	Extensive					
	In water column:	None	Little	Some	Moderate	Extensive					
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone: Left bank m Right bank m											
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank: Left bank m Right bank m											
None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

[illegible]

WATER QUALITY TDS - 146.90 mg/L ORP - 67.9 mV

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [] No [☒] Comments:

Today: Rain *N/A* Cloud cover *80%* Wind *moderate*
Comments:

Shading: 20 % Water Odour: None

Water Surface Condition: Normal Slick Scum Foaming Other

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: ~~N~~ L S M E In water column: ~~N~~ L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E cattle

Impacts: Human N L (S) M E Pastoral animals N L (S) M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Riffle (R) [17 10] %	Run [17 10] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [13 10] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS: _____

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Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: light grazing

Adjacent landuse: Left bank: Score Type highway Right bank: Score 3 Type light grazing

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 3 m Right bank 2 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 0 m Right bank 0.5 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS: _____

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 Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Natural (bushland)

Adjacent landuse: Left bank: Score 4 Type Natural Right bank: Score 1 Type unirrigated cropping

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt minor Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 3 m Right bank 1 m

	None	<u>Little</u>	Some	<u>Moderate</u>	Extensive
* Bare ground	None	<u>Little</u>	Some	<u>Moderate</u>	Extensive
* Grass	None	Little	Some	<u>Moderate</u>	Extensive
* Shrubs	<u>None</u>	Little	Some	Moderate	Extensive
* Trees <10 m high	None	<u>Little</u>	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	<u>Moderate</u>	Extensive
Presence of exotic riparian species	None	Little	Some	<u>Moderate</u>	Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 5 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2G 1-20R2</u>	
Date <u>23/01/2011</u>	Project Name <u>band Rail</u>
Time (24 hrs) <u>15:15</u>	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [X] Comments: _____

Today: Rain NO Cloud cover 40% Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | ]	
Site Name	B2G 1023			
Date	23/01/2011		Project Name	Inland Rail
Time (24 hrs)	11:15		QHSS Analysis No.	[ | | | | ]
Project Code	50121214		Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | ]		Received	[ | | | | ]
Party	[ | | ] [ | | ] [ | | ]			

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	21712.14	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	11.17	[ | | ]	2080.5
pH	7.93	[ | | ]	2100.5
Dissolved O_2 mg/l	181.73 113.3%	[ | | ]	2351.5
Turbidity NTU	3.11	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s}	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [✓] No [] Comments:
 Today: Rain ... N/A ... Cloud cover ... 20% ... Wind slight ...
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: ... 0% Water Odour: ... muddy ... smell ... organic ...
 Water Surface Condition: Normal (Slick) Scum Foaming Other
 Algae: On substrate: (N) L S M E In water column: N L (M) E
 Macrophytes: Emergent: N (L) S M E Submerged: (N) L S M E
 Floating: (N) L S M E
 Impacts: Human N L S (M) E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:
 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: light grazing golf course light grazing

Adjacent landuse: Left bank: Score 3 Type light grazing Right bank: Score 3 Type light grazing

0. Urban/semi-urban, industrial
1. Irrigated cropping, intensive forestry or heavy grazing
2. Non-irrigated cropping, moderate grazing
3. Light grazing, vegetation clearing
4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify Muddy / Organic

Substrate odour: No Yes Specify

Water surface: Normal Sticky Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) ... %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [] [] [] [] [] [] Sample Number [] [] [] [] [] [] [] [] [] [] [] []
 Site Name B2G 1-24
 Date 12/10/12 12/10/12 Project Name Inland Rail
 Time (24 hrs) 11:30 QHSS Analysis No. [] [] [] [] [] []
 Project Code SP121214
 Run Code [] [] [] [] [] [] Submitted [] [] [] [] [] [] [] [] [] [] [] []
 Party [] [] [] [] [] [] [] [] Received [] [] [] [] [] [] [] [] [] [] [] []

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY TDS = 140.40 mg/L ORP = 55.1 mV

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	<u>214.17</u>	[] [] []	2010.5
Water Temperature $^\circ\text{C}$	<u>32.13</u>	[] [] []	2080.5
pH	<u>8.127</u>	[] [] []	2100.5
Dissolved O_2 mg/l	<u>12.146</u> <u>13.7 %</u>	[] [] []	2351.5
Turbidity NTU	<u>8.12</u>	[] [] []	2030.5
Air Temperature $^\circ\text{C}$	[] [] []	[] [] []	2065.5
Total Alkalinity mg/l CaCO_3	[] [] []	[] [] []	2113.5
Phenol Alkalinity mg/l CaCO_3	[] [] []	[] [] []	2114.5
Transparency (secchi) m	[] [] []	[] [] []	2046.5
Velocity m/s	[] [] []	[] [] []	240.0
Gauge Height m	[] [] []	[] [] []	100.0
Discharge m^3/s	[] [] []	[] [] []	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: _____
 Today: Rain N/A Cloud cover 20% Wind Slight
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: None

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] [] [] %	Run [] [] [] %	Macrophytes [] [] [] % in: R % E %
Pool (rocky-K) [] [] [] %	Pool (sandy-S) [] [] [] %	K % S % Run %
Dry [] [] [] %	Riffle + Run + Pool + Dry = 100%	Algae [] [] [] % in: R % E %
Edge [] [] [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] [] [] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Cropping

Adjacent landuse: Left bank: Score 1 Type Cropping Right bank: Score 1 Type Cropping

0. Urban/semi-urban, industrial 3 Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

2. Non-irrigated cropping, moderate grazing

4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 5 m Right bank 1 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 1 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WEATHER: *Rain in past week:* Yes [] No [✓] Comments:
Today: Rain *Yes after we left* Cloud cover *90%* Wind *moderate*
 Comments:

Shading: 20 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:																										
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R	 %	E	 %						
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%		K	 %	S	 %	Run	 %								
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	 %	E	 %						
Edge	[	|	|	]	%								K	 %	S	 %	Run	 %								
Edge is % of habitat available to sample from L and R banks												Blanketing silt								[	|	|	]	%		

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: irrigated cropping

Adjacent landuse: Left bank: Score 1 Type 1.C Right bank: Score 1 Type 1.C

0. Urban/semi-urban, industrial
 1. Irrigated cropping, intensive forestry or heavy grazing
 2. Non-irrigated cropping, moderate grazing
 3. Light grazing, vegetation clearing
 4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 1 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 3 m Right bank 5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 1 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	Egeria	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type 0. Urban/semi-urban, industrial 1. Irrigated cropping, intensive forestry or heavy grazing 2. Non-irrigated cropping, moderate grazing 3. Light grazing, vegetation clearing 4. Natural											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat: (circle all types)	Shallow	Deep	Pool	Run	Riffle						
	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types). No flow (dry/isolated) Low (<watermark) Moderate (=watermark) High (>watermark) Flood											
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone: Left bank m Right bank m											
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank: Left bank m Right bank m											
None = 0% Little = 1–10% Some = 10–50% Moderate = 50–75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Irrigated cropping

Adjacent landuse: Left bank: Score Type Campylopus Right bank: Score 3 Type

0. Urban/semi-urban, industrial

1. Irrigated cropping, intensive forestry or heavy grazing

2. Non-irrigated cropping, moderate grazing

3. Dight grazing, vegetation clearing

4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 10 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

(No flow) Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 5 m Right bank 1 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 1 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | | ]
Site Name <u>B2G-SW 1-32</u>	
Date [2/4/02 | 2/20/21]	Project Name <u>Inland soil</u>
Time (24 hrs) [4:30]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^{\circ}\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^{\circ}\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l}	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^{\circ}\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | . | ]	[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s}	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)																							
Upstream landuse:																							
Adjacent landuse: Left bank: Score Type Right bank: Score Type																							
0. Urban/semi-urban, industrial						3. Light grazing, vegetation clearing																	
1. Irrigated cropping, intensive forestry or heavy grazing						4. Natural																	
2. Non-irrigated cropping, moderate grazing																							
Local catchment erosion:		None		Little		Some		Moderate		Extensive													
Water colour:		Clear		Green		Opaque		Tannin		Other													
Sediment deposits:		None		Sand		Silt		Other															
Algae: On substrate:		None		Little		Some		Moderate		Extensive													
In water column:		None		Little		Some		Moderate		Extensive													
Water odour:		No		Yes		Specify																	
Substrate odour:		No		Yes		Specify																	
Water surface:		Normal		Slick		Scum		Foaming		Other													
Variety of habitat:		Shallow		Deep		Pool		Run		Riffle													
(circle all types)		Undercut bank				LWD		Macrophytes		Other													
Bars: (bed surface protruding from normal water level and forming a bar) %																							
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).																							
No flow			Low			Moderate			High			Flood											
(dry/isolated)			(<watermark)			(=watermark)			(>watermark)														
RIPARIAN ZONE (to maximum 100 m width)																							
Width of riparian zone:				Left bank m				Right bank m															
* Bare ground				None		Little		Some		Moderate		Extensive											
* Grass				None		Little		Some		Moderate		Extensive											
* Shrubs				None		Little		Some		Moderate		Extensive											
* Trees <10 m high				None		Little		Some		Moderate		Extensive											
* Trees >10 m high				None		Little		Some		Moderate		Extensive											
Presence of exotic riparian species				None		Little		Some		Moderate		Extensive											
Width of continuous tree zone from bank:				Left bank m				Right bank m															
None = 0%				Little = 1-10%				Some = 10-50%				Moderate = 50-75%											
Extensive >75%				* Can add to >100%																			
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:																							
Native																							
Azolla		N		L		S		M		E		Water Ribbon (<i>Triglochin</i>)		N		L		S		M		E	
Duckweed		N		L		S		M		E		Water Lettuce (<i>Pistia stratiotes</i>)		N		L		S		M		E	
Hornwort (<i>Ceratophyllum</i>)		N		L		S		M		E		Water Primrose (<i>Ludwigia</i>)		N		L		S		M		E	
Stoneworts (<i>Chara</i> or <i>Nitella</i>)		N		L		S		M		E		Sedge (<i>Cyperus</i>)		N		L		S		M		E	
Hydrilla		N		L		S		M		E		Common Rush (<i>Juncus</i>)		N		L		S		M		E	
Water Milfoil (<i>Myriophyllum</i>)		N		L		S		M		E		Cumbungi (<i>Typha</i>)		N		L		S		M		E	
Pondweeds (<i>Potamogeton</i>)		N		L		S		M		E		Slender Knotweed (<i>Persicaria</i>)		N		L		S		M		E	
Ribbonweed (<i>Vallisneria</i>)		N		L		S		M		E				N		L		S		M		E	
.....		N		L		S		M		E				N		L		S		M		E	
Exotic																							
Water Hyacinth (<i>Eichhornia</i>)		N		L		S		M		E		Alligator Weed (<i>Alternanthera</i>)		N		L		S		M		E	
Salvinia		N		L		S		M		E		Elodea		N		L		S		M		E	
Para Grass (<i>Urochloa</i>)		N		L		S		M		E		<i>Egeria</i>		N		L		S		M		E	
.....		N		L		S		M		E				N		L		S		M		E	
Comments:																							
.....																							
N = none				L = 1-10% (little)				S = 10-50% (some)				M = 50-75% (moderate)				E = >75% (extensive)							



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] **Sample Number** [| | | | |]

Site Name B26-8-1.33

Date [25/01/2012] **Project Name** Inland road

Time (24 hrs) [017:31] **QHSS Analysis No.** [| | | |]

Project Code [50126214]

Run Code [| | | |] **Submitted** [A B C D E F G H I J K L M N]

Party [| |] [| |] [| |] **Received** [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY TDS - 351.00 TRP - 108.6 mV

Parameter	Value	Quality	Variable
Conductivity μS/cm@25°C	[514 | 41 | 10 ]	[ | | ]	2010.5
Water Temperature °C	[25 | 10 ]	[ | | ]	2080.5
pH	[7 | 1 | 53 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[13 | 1 | 40] <u>38.6%</u>	[ | | ]	2351.5
Turbidity NTU	[0 | 1 | 91 ]	[ | | ]	2030.5
Air Temperature °C	[ | | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO₃	[ | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO₃	[ | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | ]	[ | | ]	100.0
Discharge m³/s	[ | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [] Comments: Rained night before

Today: Rain N/A Cloud cover 80% Wind Moderate

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N E S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [10 | 10] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: IC

Adjacent landuse: Left bank: Score 1 Type IC Right bank: Score 1 Type IC

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name	32A 1.39		
Date	25/02/2012	Project Name	Inland Rail
Time (24 hrs)	08:45	QHSS Analysis No.	[ | | | | ]
Project Code	51021214	Submitted	A B C D E F G H I J K L M N
Run Code	[ | | | | ]	Received	[ | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): (N) NE E SE S SW W NW Datum: _____

WATER QUALITY		Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$	[ | 156 | 6 | ]	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$	[21.4 | 1.4 | ]	[ | | ]	2080.5
pH		[8.1 | 1.6 | ]	[ | | ]	2100.5
Dissolved O_2	mg/l	[4.1 | 1.9 | ]	[ | | ]	2351.5
Turbidity	NTU	[11.1 | 1.7 | ]	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m	[ | | . | ]	[ | | ]	2046.5
Velocity	m/s	[ | . | ]	[ | | ]	240.0
Gauge Height	m	[ | | | . | ]	[ | | ]	100.0
Discharge	m^3/s}	[ | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain light shower Cloud cover 80% Wind light breeze

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0% Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: (N) L S M E In water column: (N) L S M E

Macrophytes: Emergent: (N) L S M E Submerged: (N) L S M E

Floating: (N) L S M E

Impacts: Human N L S M (E) Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[10 | 0 | 0] %	Macrophytes	[ | | ] % in: R % E %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %		K % S % Run %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R % E %
Edge	[ | | ] %				K % S % Run %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: well camp airport

Adjacent landuse: Left bank: Score 3 Type CG Right bank: Score 0 Type Industrial (Airport)

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
 Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																													
Site Name	B2G-SW1-40																															
Date	[21/5/01 2/2/01 2/1]		Project Name	Inland Park																												
Time (24 hrs)	[09:20]		QHSS Analysis No.	[]																												
Project Code	[]		Submitted	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D		E	F	G	H	I	J	K	L	M	N																		
Run Code	[]		Received																													
Party	[] [] []																															

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments:
 Today: Rain Cloud cover Wind
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:
Water Surface Condition: Normal Slick Scum Foaming Other
Algae: On substrate: N L S M E In water column: N L S M E
Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name <u>B2G-201-42</u>	Project Name <u>Inland Pool</u>
Date [21/02/21] [d21]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [10:15]	Submitted
Project Code [50101924]	Received
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY TDS-981.5mg/L ORP-67.8mV

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[151191]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[21.12]	[ | | ]	2080.5
pH	[8.125]	[ | | ]	2100.5
Dissolved O_2 mg/l	[81.84] <u>128.1%</u>	[ | | ]	2351.5
Turbidity NTU	[0.191]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: _____
 Today: Rain Slight rain Cloud cover 70% Wind none
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: light grazing / irrigated cropping
 Adjacent landuse: Left bank: Score 1 Type C Right bank: Score 0 Type semi urban

1. Irrigated cropping, intensive forestry or heavy grazing
 2. Non-irrigated cropping, moderate grazing
 3. Light grazing, vegetation clearing
 4. Natural

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 20 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
 Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ []	[]	2010.5
Water Temperature	$^\circ\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU [•]	[]	2030.5
Air Temperature	$^\circ\text{C}$ [•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0
Discharge Method:	measured ☐ (gauged) ☐	obtained from rating curve ☒	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading:		% Water Odour:																								
Water Surface Condition:		Normal					Slick					Scum					Foaming					Other				
Algae:	On substrate:	N	L	S	M	E						In water column:	N	L	S	M	E									
Macrophytes:	Emergent:	N	L	S	M	E						Submerged:	N	L	S	M	E									
	Floating:	N	L	S	M	E																				
Impacts:	Human	N	L	S	M	E	Pastoral animals					N	L	S	M	E	Non-pastoral animals					N	L	S	M	E
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)									

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS:

(Office use only) Entered into HydSys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)													
Upstream landuse:													
Adjacent landuse: Left bank: Score Type Right bank: Score Type													
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing								
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural								
2. Non-irrigated cropping, moderate grazing													
Local catchment erosion:		None		Little		Some		Moderate		Extensive			
Water colour:		Clear		Green		Opaque		Tannin		Other			
Sediment deposits:		None		Sand		Silt		Other					
Algae: On substrate:		None		Little		Some		Moderate		Extensive			
In water column:		None		Little		Some		Moderate		Extensive			
Water odour:		No		Yes		Specify							
Substrate odour:		No		Yes		Specify							
Water surface:		Normal		Slick		Scum		Foaming		Other			
Variety of habitat:		Shallow		Deep		Pool		Run		Riffle			
(circle all types)		Undercut bank				LWD		Macrophytes		Other			
Bars: (bed surface protruding from normal water level and forming a bar) %													
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).													
No flow		Low		Moderate		High		Flood					
(dry/isolated)		(<watermark)		(=watermark)		(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)													
Width of riparian zone:			Left bank m				Right bank m						
* Bare ground			None		Little		Some		Moderate		Extensive		
* Grass			None		Little		Some		Moderate		Extensive		
* Shrubs			None		Little		Some		Moderate		Extensive		
* Trees <10 m high			None		Little		Some		Moderate		Extensive		
* Trees >10 m high			None		Little		Some		Moderate		Extensive		
Presence of exotic riparian species			None		Little		Some		Moderate		Extensive		
Width of continuous tree zone from bank:			Left bank m				Right bank m						
None = 0%			Little = 1-10%			Some = 10-50%			Moderate = 50-75%			Extensive >75%	
												* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:													
Native													
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E		
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E		
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E		
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E		
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E		
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E		
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E		
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E		
.....	N	L	S	M	E	.....	N	L	S	M	E		
Exotic													
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E		
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E		
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E		
.....	N	L	S	M	E	.....	N	L	S	M	E		
Comments:													
.....													
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)													

COMMENTS:

.....

.....

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae:	On substrate:	None	Little	Some	Moderate	Extensive					
	In water column:	None	Little	Some	Moderate	Extensive					
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)											
	Undercut bank		LWD		Macrophytes	Other					
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:											
	Left bank m			Right bank m							
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:											
	Left bank m			Right bank m							
None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name	B2G-SW1.03																														
Date	2/4/03/2/02/1	Project Name	B2G Surface water monitoring																												
Time (24 hrs)	[:]	QHSS Analysis No.	[]																												
Project Code	[5 1 1 4 8 1]	Submitted	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C		D	E	F	G	H	I	J	K	L	M	N																	
Run Code	[]	Received																													
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity μS/cm@25°C	[ | | | | ]	[ | | ]	2010.5
Water Temperature °C	[ | . | ]	[ | | ]	2080.5
pH	[ | . | ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[ | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | ]	[ | | ]	2030.5
Air Temperature °C	[ | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO₃	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO₃	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | ]	100.0
Discharge m³/s	[ | | | . | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged) obtained from ☒ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

Site Number []	Sample Number []
Site Name <u>B2G 1006 HFE</u>	
Date [2 4 6 3 2 0 2 1]	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) [0 9 : 0 0]	QHSS Analysis No. []
Project Code [5 1 1 4 8 1]	
Run Code []	Submitted
Party [] [] []	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

ORP - 114.8 mV

TDS - 57-85 mg/L

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^{\circ}\text{C}$ [155.19] SP-88.7	[ | | ]	2010.5
Water Temperature	$^{\circ}\text{C}$ [212.18]	[ | | ]	2080.5
pH	[6.108]	[ | | ]	2100.5
Dissolved O_2	mg/l [14.148] 50.6%	[ | | ]	2351.5
Turbidity	NTU [21.97]	[ | | ]	2030.5
Air Temperature	$^{\circ}\text{C}$ [ | | . | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m} [ | | . | | ]	[ | | ]	2046.5
Velocity	m/s} [ | . | | ]	[ | | ]	240.0
Gauge Height	m} [ | | | . | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ / estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain *no* Cloud cover *100%* Wind *moderate*
Comments:

Shading: 70 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: ~~(N)~~ L S M E In water column: ~~(N)~~ L S M E

Macrophytes: Emergent: ~~N~~ L S M E Submerged: ~~N~~ L S M E

Floating: ☒ N ☐ L ☐ S ☐ M ☐ E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] % Run [] % Macrophytes [] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge	[	|	|	]	%	K..... %	S..... %	Run..... %
------	---	--	--	---	---	----------	----------	------------

Edge is % of habitat available to sample from L and R banks

Blanketing silt [1 1] %

COMMENTS: flood event

NEW SPOT for 1.06 HFV

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: grazing

Adjacent landuse: Left bank: Score 3 Type grazing Right bank: Score 3 Type grazing

0. Urban/semi-urban, industrial
1. Irrigated cropping, intensive forestry or heavy grazing
2. Non-irrigated cropping, moderate grazing
3. Light grazing, vegetation clearing
4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 5 m Right bank 5 m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank 15 m Right bank 15 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

word to tell due to flood level and over bank

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						Exotic					
	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											
Exotic											
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2G 107 HFE</u>	
Date <u>24/03/2014</u>	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) <u>10:00</u>	QHSS Analysis No. [ | | | | ]
Project Code [5 | 1 | 1 | 4 | 8 | 1 | ]	
Run Code [ | | | | ]	Submitted [A B C D E F G H I J K L M N]
Party [ | | ] [ | | ] [ | | ]	Received [ | | ] [ | | ] [ | | ]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[8 | 8 | 0 | 1 | ] <u>113.8 mV</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 2 | 0 | 2 | ]	[ | | ]	2080.5
pH	[8 | 0 | 0 | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 5 | 0 | 2 | ] <u>60.1 %</u>	[ | | ]	2351.5
Turbidity NTU	[4 | 5 | 0 | 1 | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 0 | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | 0 | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | 0 | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | 0 | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [☒] No [] Comments: _____
 Today: Rain sprinkle Cloud cover 100 % Wind light
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [1 | 0 | 9 | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [7 | 0 | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Cropping

Adjacent landuse: Left bank: Score 3 Type grazing Right bank: Score 1 Type Cropping

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10 m Right bank 10 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Sample location before the water course so not accurate
Cannot accurately carry out observation due to flood level.



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | | | ]	Sample Number [ | | | | | | | | | | | | | | | ]
Site Name <u>B2G 111 HFE</u>	
Date <u>24/01/2021</u>	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) <u>11:30</u>	QHSS Analysis No. [ | | | | | ]
Project Code [5 | 1 | 1 | 4 | 8 | 1 | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude

Reach orientation (looking downstream):

Longitude

Datum:

N

NE

E

SE

S

SW

W

NW

WATER QUALITY

ORP - 93.1 mV

TDS - 66.65 mg/L

Parameter	Value	Quality	Variable
Conductivity µS/cm @ 25°C	916.181	[ | | ]	2010.5
Water Temperature °C	22.1	[ | | ]	2080.5
pH	6.1	[ | | ]	2100.5
Dissolved O ₂ mg/l	5.1	[ | | ]	2351.5
Turbidity NTU	30.1	[ | | ]	2030.5
Air Temperature °C	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO₃	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO₃	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m³/s	[ | | ]	[ | | ]	140.0

Discharge Method:

measured ☐

obtained from rating curve ☐

estimated: ☐

no flow ☐

trickle ☐

>0.01 cumecs ☐

WEATHER: Rain in past week:

Yes ☒

No ☐

Comments:

Today:

Rain ☒

Cloud cover ☒

Wind ☒

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 %

Water Odour: none

Water Surface Condition: Normal

Slick

Scum

Foaming

Other

Algae: On substrate: N L S M E

In water column: N L S M E

Macrophytes: Emergent: N L S M E

Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E

Pastoral animals N L S M E

Non-pastoral animals N L S M E

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] %

Run [| |] %

Pool (rocky-K) [| |] %

Pool (sandy-S) [| |] %

Dry [| |] %

Riffle + Run + Pool + Dry = 100%

Edge [| |] %

Edge is % of habitat available to sample from L and R banks

Macrophytes [| |] % in: R [| |] % E [| |] %

K [| |] % S [| |] % Run [| |] %

Algae [| |] % in: R [| |] % E [| |] %

K [| |] % S [| |] % Run [| |] %

Blanketing silt [| |] %

COMMENTS:

(Office use only)

Entered into Hydsys

/ /

by

Checked on

/ /

by

Entered into AQEIS

/ /

by

Checked on

/ /

by

REACH OBSERVATIONS (of 100 m stream length)Upstream landuse: cropping, forestryAdjacent landuse: Left bank: Score 1, 3 Type Right bank: Score 1, 3 Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 8 m Right bank 8 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 10 m Right bank 8 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name	B2G-SW-14																														
Date	24/03/2012																														
Time (24 hrs)	13:15																														
Project Code	[5 1 1 4 8 1]	Project Name	B2G Surface water monitoring																												
Run Code	[]	QHSS Analysis No.	[]																												
Party	[] [] []	Submitted	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C		D	E	F	G	H	I	J	K	L	M	N																	
		Received																													

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (seechi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes [X] No [] Comments:

Today: Rain none Cloud cover Wind
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E
Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae:	On substrate:	None	Little	Some	Moderate	Extensive					
	In water column:	None	Little	Some	Moderate	Extensive					
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)											
	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:											
	Left bank m			Right bank m							
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:											
	Left bank m			Right bank m							
None = 0%	Little = 1-10%	Some = 10-50%	Moderate = 50-75%	Extensive >75%	* Can add to >100%						
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | | | ]	Sample Number	[ | | | | | | | | | | | | | ]
Site Name	B2G-SW#16		
Date	[24/03/2012]	Project Name	B2G Surface water monitoring
Time (24 hrs)	[13:36]	QHSS Analysis No.	[ | | | | | ]
Project Code	[5114811]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE (S) SW W NW Datum: _____

WATER QUALITY TDS = 107.90 mg/L | 98.7 ORP | 165.7 μ S SPC

Parameter	Value	Quality	Variable
Conductivity μ S/cm@25°C	[160.18 ]	[ | | ]	2010.5
Water Temperature °C	[23.15 ]	[ | | ]	2080.5
pH	[6.38 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[5.193] 69.9%	[ | | ]	2351.5
Turbidity NTU	[4.11 ]	[ | | ]	2030.5
Air Temperature °C	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [<] No [] Comments: _____
 Today: Rain none Cloud cover 10% Wind light breeze
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 40 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: (N) L S M E In water column: (N) L S M E

Macrophytes: Emergent: (N) L S M E Submerged: (N) L S M E

Floating: (N) L S M E

Impacts: Human N L S (M) E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [130] %	Run [170] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Cult. grass

Adjacent landuse: Left bank: Score 3 Type CG Right bank: Score 4 Type CG

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 30 % fallen tree into waterway

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 2m m Right bank 1m m

	None	<u>Little</u>	Some	Moderate	Extensive
* Bare ground	None	<u>Little</u>	Some	Moderate	Extensive
* Grass	None	Little	Some	<u>Moderate</u>	Extensive
* Shrubs	<u>None</u>	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	<u>Some</u>	Moderate	Extensive
* Trees >10 m high	None	<u>Little</u>	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	<u>Some</u>	Moderate	Extensive

Width of continuous tree zone from bank: Left bank 1m m Right bank 1m m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | | ]	Sample Number	[ | | | | | | | | | | | | ]
Site Name	B2G 1.15		
Date	21/10/2012	Project Name	B2G Surface water monitoring
Time (24 hrs)	16:00	QHSS Analysis No.	[ | | | | | ]
Project Code	[5 | 1 | 1 | 4 | 8 | 1 | ]	Submitted	[A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY $QRP = 47.5 \text{ m/s}$ $SPL = 141.7 \text{ } \frac{\text{m}^3}{\text{s}}$ $TDS = 92.30 \text{ mg/L}$

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[1 | 3 | 3 | - | 3 ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 2 | . | 7 ]	[ | | ]	2080.5
pH	[1 | 2 | . | 9 | 9 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 6 | . | 7 | 8] 78.9\%	[ | | ]	2351.5
Turbidity NTU	[1 | 1 | 7 | . | 0 ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s}	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain yes Cloud cover 100% Wind moderate
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: none
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: (N) L S M E In water column: (N) L S M E
 Macrophytes: Emergent: (N) L S M E Submerged: (N) L S M E
 Floating: (N) L S M E
 Impacts: Human N L S (M) E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [1 | 3 | 0] %	Run [1 | 7 | 0] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: IC

Adjacent landuse: Left bank: Score 1 Type IC Right bank: Score 1 Type IC

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 6 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 2 m Right bank 5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 3 m Right bank 4 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain yes Cloud cover 100% Wind Moderate
Comments:

Shading: 10 % Water Odour: None

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:																								
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R	 %	E	 %				
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	 %	S	 %	Run	 %		
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	 %	E	 %				
Edge	[	|	|	]	%												K	 %	S	 %	Run	 %		
Edge is % of habitat available to sample from L and R banks												Blanketing silt						[	|	|	]	%		

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
 Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)Upstream landuse: light grazingAdjacent landuse: Left bank: Score 5 Type Right bank: Score 3 Type light grazing

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt OtherAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate ExtensiveWater odour: No Yes SpecifySubstrate odour: No Yes SpecifyWater surface: Normal Slick Scum Foaming OtherVariety of habitat: Shallow Deep Pool Run Riffle(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:

Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive* Grass None Little Some Moderate Extensive* Shrubs None Little Some Moderate Extensive* Trees <10 m high None Little Some Moderate Extensive* Trees >10 m high None Little Some Moderate ExtensivePresence of exotic riparian species None Little Some Moderate ExtensiveWidth of continuous tree zone from bank: Left bank 5 m Right bank 3 m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2G 1023</u>	
Date <u>21/03/2012</u>	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) <u>14:00</u>	QHSS Analysis No. [ | | | | ]
Project Code [5 | 1 | 1 | 4 | 8 | 1 | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE (S) SW W NW Datum: _____

WATER QUALITY ORP = 49.0 mV | TDS = 83.85 mg/L

Parameter	Value	Quality	Variable
Conductivity μS/cm@25°C	[1 | 1 | 9 | 1 | 1] SPC - 129.0	[ | | ]	2010.5
Water Temperature °C	[2 | 1 | 0 ]	[ | | ]	2080.5
pH	[6 | 1 | 9 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[4 | 1 | 8] 54.8%	[ | | ]	2351.5
Turbidity NTU	[7 | 0 | 1 | 4 ]	[ | | ]	2030.5
Air Temperature °C	[ | | 1 | 0 ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO₃	[ | | 1 | 3 ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO₃	[ | | 1 | 4 ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 1 | 4 ]	[ | | ]	2046.5
Velocity m/s	[ | 1 | 0 ]	[ | | ]	240.0
Gauge Height m	[ | | 1 | 0 ]	[ | | ]	100.0
Discharge m³/s	[ | | 1 | 4 ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [x] No [] Comments:
 Today: Rain Light to heavy rain Cloud cover completely Wind minimal
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0 % Water Odour: none
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: (N) L S M E In water column: (N) L S M E
 Macrophytes: Emergent: N L S M E Submerged: (N) L S M E
 Floating: (N) L S M E
 Impacts: Human N L S (M) E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [1 | 0 | 0] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

(Golf course downstream)

Upstream landuse: IC

Adjacent landuse: Left bank: Score 1 Type IC Right bank: Score 1 Type IC

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 2m m Right bank 2m m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 1m m Right bank 1m m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: irrigated cropping

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear ☐ Green ☐ Opaque ☒ Tannin ☐ Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: ☒ None ☐ Little ☐ Some ☐ Moderate ☐ Extensive

Water odour: ☒ No Yes Specify

Substrate odour: ☒ No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank . 5 m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					

	None	Little	Some	Moderate	Extensive
* Grass					

* Shrubs	None	<u>Little</u>	Some	Moderate	<u>Extensive</u>
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* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high	None	Little	Some	Moderate	Extensive
1					
2					
3					
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5					
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100					

Presence of exotic riparian species	None	Little	Some	Moderate	Extensive
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Width of continuous tree zone from bank: Left bank 5 m Right bank 8 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					

	N	L	S	M	E		N	L	S	M	E
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					

Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
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Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	I	S	M	F	Sedge (<i>Cyperus</i>)	N	I	S	M	F
---	---	---	---	---	---	--------------------------	---	---	---	---	---

Stoneworts (<i>Chara</i> spp.)	N	I	S	M	E	Common Rush (<i>Juncus</i>)	N	I	S	M	E
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Hydria	N	E	S	M	E	Common Rush (<i>Juncus</i>)	N	E	S	M	E
W. Mulberry (<i>Morus alba</i>)	N	L	S	M	E	Gambusi (<i>Turks</i>)	N	L	S	M	E

Water Milfoil (<i>Myriophyllum</i>)	N	E	S	M	E	Cambungi (1) <i>Pha</i>	N	E	S	M	E
Water Hyacinth (<i>Eichhornia</i>)	N	E	S	M	E	Shahd Khattam (P. 1) <i>Pha</i>	N	E	S	M	E

Pondweeds (<i>Najas</i>)	N	L	S	M	E	Slender Knotweed (<i>Fragaria</i>)	N	L	S	M	E
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Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
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	N	L	S	M	E		N	L	S	M	E
Salvinia						Elodea					

Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
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	N	L	S	M	E		N	L	S	M	E
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Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | | | ]	Sample Number	[ | | | | | | | | | | | | | ]
Site Name	B2G-201.27		
Date	[2 | 3 | 10 | 3 | 2 | 0 | 2 | 1]	Project Name	B2G Surface water monitoring
Time (24 hrs)	[1 | 3 : 00]	QHSS Analysis No.	[ | | | | | ]
Project Code	[5 | 1 | 1 | 4 | 8 | 1 | ]	Submitted	[A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY TDS - 26.10 mg/L ORP - 52.9 mV

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1 | 8 | 1 | 1 | 9] SPC - 193.6	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 1 | 1 | 8 ]	[ | | ]	2080.5
pH	[6 | 1 | 6 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[6 | 1 | 3 | 9] 72.9%	[ | | ]	2351.5
Turbidity NTU	[5 | 0 | 1 | 4 ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [x] No [] Comments: _____

Today: Rain light-heavy rain Cloud cover 100% Wind none
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10% Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: (N) L S M E In water column: (N) L S M E

Macrophytes: Emergent: (N) L S M E Submerged: (N) L S M E

Floating: (N) L S M E

Impacts: Human N L S (M) E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [100] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Cropping

Adjacent landuse: Left bank: Score 1 Type 1 Right bank: Score 1 Type 1

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name <u>B2G 1.29</u>	
Date <u>24/03/2011</u>	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) <u>11:00</u>	QHSS Analysis No. [ | | | | | ]
Project Code [5 | 1 | 1 | 4 | 8 | 1 | ]	
Run Code [ | | | | | ]	Submitted [A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Party [ | | ] [ | | ] [ | | ]	Received [ | | | | | ]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity μS/cm@25°C	[ | | | | ]	[ | | ]	2010.5
Water Temperature °C	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature °C	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO₃	[ | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO₃	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | . | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m³/s	[ | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % **Water Odour:** _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		Low	Moderate	High	Flood						
(dry/isolated)		(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%	Some = 10-50%	Moderate = 50-75%	Extensive >75%		* Can add to >100%				
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [~~826~~ ~~151~~] Sample Number [| | | | | | | | | | | | | |]
 Site Name B2G - SW 1.30
 Date [21/01/2012] Project Name B2G Surface water monitoring
 Time (24 hrs) [10:50] QHSS Analysis No. [| | | | |]
 Project Code [5 | 1 | 1 | 4 | 8 | 1 |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY		TDS - 178.75 mg/L	ORP - 73.9 mV
Parameter	Value	Quality	Variable
Conductivity μS/cm@25°C	[216 | 1 | 0 | 9 ]	[ | | ]	2010.5
Water Temperature °C	[21.2 | 0 | 4 ]	[ | | ]	2080.5
pH	[7.1 | 6 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[71.2 ]	[ | | ]	2351.5
Turbidity NTU	[81.2 ]	[ | | ]	2030.5
Air Temperature °C	[ | | 0 | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | | 0 | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | | 0 | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | | 0 | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments:
 Today: Rain light/heavy rain Cloud cover 100% Wind Moderate
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: (N) L S M E In water column: (N) L S M E
 Macrophytes: Emergent: (N) L S M E Submerged: (N) L S M E
 Floating: (N) L S M E
 Impacts: Human N L S (M) E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | 0 | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:
 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)Upstream landuse: ... un-gated crop

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt OtherAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate ExtensiveWater odour: No Yes SpecifySubstrate odour: No Yes SpecifyWater surface: Normal Slick Scum Foaming OtherVariety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)Width of riparian zone: Left bank ... 2 ... m Right bank ... 2 ... m* Bare ground None Little Some Moderate Extensive* Grass None Little Some Moderate Extensive* Shrubs None Little Some Moderate Extensive* Trees <10 m high None Little Some Moderate Extensive* Trees >10 m high None Little Some Moderate ExtensivePresence of exotic riparian species None Little Some Moderate ExtensiveWidth of continuous tree zone from bank: Left bank ... 2 ... m Right bank ... 2 ... m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | | ]	Sample Number	[ | | | | | | | | | | | | ]
Site Name	B2G-SW1.32		
Date	24/03/2021	Project Name	B2G Surface water monitoring
Time (24 hrs)	16:30	QHSS Analysis No.	[ | | | | | ]
Project Code	5114811	Submitted	A B C D E F G H I J K L M N
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude		Longitude	
Reach orientation (looking downstream): N NE <u>E</u> SE <u>SE</u> SW W NW Datum:			
WATER QUALITY OLP: 69.9 mV TDS: 144.30 mg/L SPC: 222.3 us/cm			
Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2 | 1 | 6 | . | 1 | 1 ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 3 | . | 1 | 6 ]	[ | | ]	2080.5
pH	[1 | 6 | . | 1 | 7 | 7 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 3 | . | 1 | 9 | 5] 47.5 %	[ | | ]	2351.5
Turbidity NTU	[3 | 1 | . | 1 | 2 ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | . | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments:

Today: Rain none Cloud cover 0% Wind Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 40 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [1 | 0 | 0] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: IC

Adjacent landuse: Left bank: Score 12 Type IC Right bank: Score 1 Type IC → adjacent also

0. Urban/semi-urban, industrial
1. Irrigated cropping, intensive forestry or heavy grazing
2. Non-irrigated cropping, moderate grazing
3. Light grazing, vegetation clearing
4. Natural

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 1m m Right bank 5m m

* Bare ground	None	<u>Little</u>	Some	Moderate	Extensive
* Grass	None	Little	Some	<u>Moderate</u>	Extensive
* Shrubs	<u>None</u>	Little	Some	Moderate	Extensive
* Trees <10 m high	None	<u>Little</u>	Some	Moderate	Extensive
* Trees >10 m high	None	Little	<u>Some</u>	Moderate	Extensive
Presence of exotic riparian species	None	Little	<u>Some</u>	Moderate	Extensive

Width of continuous tree zone from bank: Left bank 1m m Right bank 2m m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name	B2G-1.33																														
Date	24/03/2011																														
Time (24 hrs)	16:00																														
Project Code	[5 1 1 4 8 1]	Project Name	B2G Surface water monitoring																												
Run Code	[]	QHSS Analysis No.	[]																												
Party	[] [] []	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
		Received																													

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | . | | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2G - 1039</u>	
Date <u>25/03/2012</u>	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) <u>10:45</u>	QHSS Analysis No. [ | | | | ]
Project Code [5 | 1 | 1 | 4 | 8 | 1 | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY TDS = 265.85 mg/L SPC = 408.8 u/cm ORP = 39.9 mV

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[3 | 9 | 6 | 1 | 9] <u>us/cm</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 3 | 1 | 9] <u>water</u>	[ | | ]	2080.5
pH	[7 | 1 | 3] <u>7</u>	[ | | ]	2100.5
Dissolved O ₂ mg/l	[1 | 3 | 1 | 9] <u>10</u> 45.9%	[ | | ]	2351.5
Turbidity NTU	[1 | 2 | 1 | 9 ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [x] No [] Comments: _____
 Today: Rain none Cloud cover clear Wind Light breeze
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [1 | 0 | 0] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: IC

Adjacent landuse: Left bank: Score IC Type IC Right bank: Score Urban Type Urban

1. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

2. Non-irrigated cropping, moderate grazing 4. Natural

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 2m m Right bank 5m m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 1m m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | | | ]
Site Name <u>B2G 1040</u>	
Date <u>25/10/2021</u>	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) <u>10:30</u>	QHSS Analysis No. [ | | | | | ]
Project Code [5 | 1 | 1 | 4 | 8 | 1 | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY *TDS = 922.5 mg/l ORP = 21.3 mV SPC = 650 uS/cm*

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[5|6|3|.|0] <i>uS/cm</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1|8|.|3]	[ | | ]	2080.5
pH	[7|8|.|3] <i>4</i>	[ | | ]	2100.5
Dissolved O_2 mg/l	[1|9|.|1] <i>5</i> <i>93.8%</i>	[ | | ]	2351.5
Turbidity NTU	[1|8|.|0]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [X] No [] Comments:

Today: Rain *none* Cloud cover *Clear* Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)																		
Shading: 0 %		Water Odour: none																
Water Surface Condition: Normal		Slick			Scum			Foaming			Other: due to flow off rocks							
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

PERCENT OF HABITAT TYPES IN 100 m REACH:																										
Riffle (R)	[	|	|	]	%	Run	[	1	0	]	%	Macrophytes	[	|	|	]	% in: R	.....	%	E	.....	%				
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	.....	%	S	.....	%	Run	.....	%	
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	.....	%	E	.....	%				
Edge	[	|	|	]	%												K	.....	%	S	.....	%	Run	.....	%	
Edge is % of habitat available to sample from L and R banks												Blanketing silt										[	|	|	]	%

COMMENTS:

.....

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: IC

Adjacent landuse: Left bank: Score 3 Type CG Right bank: Score 3 Type CG

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle → (light)
(circle all types)
Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10m m Right bank 40m m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2G - 1.42</u>	
Date <u>05/09/2014</u>	Project Name <u>B2G Surface water monitoring</u>
Time (24 hrs) <u>11:30</u>	QHSS Analysis No. [ | | | | ]
Project Code <u>[5 | 1 | 1 | 4 | 8 | 1 | ]</u>	
Run Code [ | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY		ORP - 34mV TDS - 500.00	
Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	<u>718.19</u> <u>SPC-775</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	<u>21.4</u>	[ | | ]	2080.5
pH	<u>7.188</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>71.13</u> <u>87.2%</u>	[ | | ]	2351.5
Turbidity NTU	<u>13.77</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	<u>18.17</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged) obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain none Cloud cover 0% Wind Moderate
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0 % Water Odour: none

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Chopping + road

Adjacent landuse: Left bank: Score 1 Type LC Right bank: Score 0 Type Urban

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 40 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m

	None	Little	Some	Moderate	Extensive
* Bare ground	<u>None</u>				
* Grass	None	Little	Some	Moderate	<u>Extensive</u>
* Shrubs	<u>None</u>	Little	Some	Moderate	Extensive
* Trees <10 m high	<u>None</u>	Little	Some	Moderate	Extensive
* Trees >10 m high	<u>None</u>	Little	Some	Moderate	<u>Extensive</u>
Presence of exotic riparian species	None	Little	Some	Moderate	<u>Extensive</u>

Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | | | |] Sample Number [| | | | | | | | | | | | |]

Site Name _____

Date [1 | 3 | 0 | 4 | 2 | 0 | 2 |] Project Name B2G Surface water monitoring

Time (24 hrs) [1 | 6 : 3 | 0] QHSS Analysis No. [| | | | |]

Project Code [5 | 1 | 1 | 4 | 8 | 1 |]

Run Code [| | | | | |] Submitted [A | B | C | D | E | F | G | H | I | J | K | L | M | N]

Party [| |] [| |] [| |] Received [| | | | | | | | | | |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 5 | . | 0 ]	[ | | ]	2080.5
pH	[6 | 7 | 5 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[4 | 6 | 2] % 52.1	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] SpC: 224.6	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] C: 205.0	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ] TDS: 146.25	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ] PPT 0.11	[ | | ]	2046.5
Velocity m/s	[ | . | ] ORP 73.9	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % **Water Odour:** _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank	LWD	Macrophytes	Other							
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[][][][][][][][]	Sample Number	[][][][][][][][][][][][][][][][][][]																												
Site Name																															
Date	[13/04/20][][][]	Project Name	B2G Surface water monitoring																												
Time (24 hrs)	[17:49]	QHSS Analysis No.	[][][][][][][]																												
Project Code	[5][1][1][4][8][1][]	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[][][][][][][]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[][][] [][][] [][][]																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1 | 9 | 6 | . | 9] SPC: 215.8	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 0 | . | 4] TDS: 140.40	[ | | ]	2080.5
pH	[7 | . | 0 | 0] SAL: 0.10	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | 5 | . | 9] 8 % 66.3	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] OFP: 14.0 mV	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % **Water Odour:** _____

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R	E

Pool (rocky-K)	[			]	%	Pool (sandy-S)	[			]	%	K		%	S		%	Run		%
----------------	---	--	--	---	---	----------------	---	--	--	---	---	---	-------	---	---	-------	---	-----	-------	---

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge	[	|	|	]	%	K..... %	S..... %	Run..... %
------	---	--	--	---	---	----------	----------	------------

Edge is % of habitat available to sample from L and R banks

Blanketing silt [1 1] %

COMMENTS: _____

(Office use only) Entered into Hydrys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank	LWD	Macrophytes	Other							
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone: Left bank m Right bank m											
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank: Left bank m Right bank m											
None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [15261103] Sample Number [| | | | | | | | | | | | |]
 Site Name _____
 Date [11/04/2011] Project Name B2G Surface water monitoring
 Time (24 hrs) [08:55] QHSS Analysis No. [| | | | |]
 Project Code [5114811] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[238.16] <i>SPC: 270.8</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[18.18] <i>TDS: 176.15</i>	[ | | ]	2080.5
pH	[7.18] <i>SAL: 0.13 ppt</i>	[ | | ]	2100.5
Dissolved O_2 mg/l	[7.24] <i>% 77.7</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>ORP: 134.1 mV</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover *N/A* Wind _____
 Comments: *Fine*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *10* % Water Odour: *N/A*
 Water Surface Condition: *Normal* Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [100] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 Edge [| |] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Ng Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other Post flood

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass No None Little Some Moderate Extensive

* Shrubs Change None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						Exotic					
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[6 2 6 - 6]	Sample Number	[]																												
Site Name																															
Date	[4 1 4 1 2]	Project Name	B2G Surface water monitoring																												
Time (24 hrs)	[08 : 06]	QHSS Analysis No.	[]																												
Project Code	[5 1 1 4 8 1]	Submitted	<table border="1"> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[2 | 4 | 4 | 2 | 8] Sp. 680.3	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 8 | 0 | 4 ]	[ | | ]	2080.5
pH	[7 | 0 | 9 | 3 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[6 | 3 | 0] % 67.2	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 0 | ] +PS: 182.00	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | 0 | ] SAL: 0.13 ppt	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | 0 | ] ppb	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | | ] ORP: 152.6 mV	[ | | ]	2046.5
Velocity m/s	[ | 0 | | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | 0 | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [] No [☒] Comments:

Today: Rain Cloud cover *Nil* Wind

Comments: *Fine*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 00 %		Water Odour:																				
Water Surface Condition:		Normal			Slick			Scum			Foaming			Other								
Algae:	On substrate:	N	L	S	M	E	In water column:			N	L	S	M	E								
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:			N	L	S	M	E								
	Floating:	N	L	S	M	E																
Impacts:	Human	N	L	S	M	E	Pastoral animals			N	L	S	M	E	Non-pastoral animals			N	L	S	M	E
N = none		L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)											

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R %	E %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %		K % S %	Run %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R %	E %
Edge	[ | | ] %				K % S %	Run %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %	

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other first flood silt

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify first flood silt

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0.6 high level

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

Queensland
Government
Natural Resources
and Mines

WATER QUALITY SAMPLING FIELD SHEET

Site Number [107] Sample Number []
Site Name _____
Date [13/04/12] Project Name B26
Time (24 hrs) [12:00] QHSS Analysis No. []
Project Code [] Submitted []
Run Code [] Received []
Party []

SAMPLING LOCATION: Latitude _____ Longitude _____
Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[199 | 1.18 | ] S/C 226.0	[]	2010.5
Water Temperature $^\circ\text{C}$	[13 | 1.9 | ]	[ ]	2080.5
pH	[7 | 1.02 | ] Sol 0.11 ppt	[]	2100.5
Dissolved O_2 mg/l	[6 | 1.34 | ] 0.83%	[]	2351.5
Turbidity NTU	[] Lab	[]	2030.5
Air Temperature $^\circ\text{C}$	[]	[]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[] TDS 196.90	[]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[]	[]	2114.5
Transparency (secchi) m	[] ORP 132.5	[]	2046.5
Velocity m/s	[]	[]	240.0
Gauge Height m	[]	[]	100.0
Discharge m^3/s	[]	[]	140.0

Discharge Method: measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [X] Comments: _____

Today: Rain _____ Cloud cover 100% Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: [X] L S M E In water column: [X] L S M E

Macrophytes: Emergent: [X] L S M E Submerged: [X] L S M E

Floating: [X] L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] % Run [] % Macrophytes [] % in: R % E %
Pool (rocky-K) [] % Pool (sandy-S) [] % K % S % Run %
Dry [] % Riffle + Run + Pool + Dry = 100% Algae [] % in: R % E %
Edge [] % K % S % Run %
Edge is % of habitat available to sample from L and R banks Blanketing silt [] %

COMMENTS: No change - large flow still present

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt Other High flow problemAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify Low - silt presentWater surface: Normal Slack Scum Foaming Other Slack presentVariety of habitat: Shallow Deep Pool Run Riffle

(circle all types)

Undercut bank

LWD

Macrophytes

Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:

Left bank m

Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank:

Left bank m

Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E

..... N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

[illegible]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [2 3 2 . 5] Spc: 265.3	[]	2010.5
Water Temperature	$^\circ\text{C}$ [1 8 . 7] TDS: 172.90	[]	2080.5
pH	[1 6 . 9] 3 SAL: 0.13 ppt	[]	2100.5
Dissolved O ₂	mg/l [4 1 . 8] %: 44.9	[]	2351.5
Turbidity	NTU [] ORP: 134.8 mV	[]	2030.5
Air Temperature	$^\circ\text{C}$ [.]	[]	2065.5
Total Alkalinity	mg/l CaCO ₃ [.]	[]	2113.5
Phenol Alkalinity	mg/l CaCO ₃ [.]	[]	2114.5
Transparency (secchi)	m [.]	[]	2046.5
Velocity	m/s [.]	[]	240.0
Gauge Height	m [.]	[]	100.0
Discharge	m ³ /s [.]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover *W/I* Wind

Comments: *Fine*

Shading: 70 %		Water Odour: Nil																
Water Surface Condition: Normal		Slick			Scum			Foaming			Other							
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)							

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand *Silt* Other *per. flood can over some*

Algae: On substrate: *None* Little Some Moderate Extensive
In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: *Normal* Slick Scum Foaming Other

Variety of habitat: Shallow Deep *Pool - water* Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low *Moderate* High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass *No change* None Little Some Moderate Extensive

* Shrubs *No change* None Little Some Moderate Extensive

* Trees <10 m high *No change* None Little Some Moderate Extensive

* Trees >10 m high *No change* None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native *No flowering*

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											
Exotic											
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | 1.1/14] Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date [19/10/12] Project Name B2G
 Time (24 hrs) [13:06] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted _____
 Run Code [| | | | |] Received _____
 Party [HGM] [JWB] [| |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ]	[ | | ]	2101.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

Upstream landuse:					
Adjacent landuse: Left bank: Score		Type		Right bank: Score..... Type.....	
0. Urban/semi-urban, industrial		3. Light grazing, vegetation clearing			
1. Irrigated cropping, intensive forestry or heavy grazing		4. Natural			
2. Non-irrigated cropping, moderate grazing					
Local catchment erosion:	None	Little	Some	Moderate	Extensive
Water colour:	Clear	Green	Opaque	Tannin	Other
Sediment deposits:	None	Sand	Silt	Other	
Algae: On substrate:	None	Little	Some	Moderate	Extensive
In water column:	None	Little	Some	Moderate	Extensive
Water odour:	No	Yes	Specify		
Substrate odour:	No	Yes	Specify		
Water surface:	Normal	Slick	Scum	Foaming	Other
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
(circle all types)	Undercut bank		LWD	Macrophytes	Other
Bars: (bed surface protruding from normal water level and forming a bar) %					
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).					
	No flow	Low	Moderate	High	Flood
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)	

Width of riparian zone:			Left bank m		Right bank m	
* Bare ground	None	Little	Some	Moderate	Extensive	
* Grass	None	Little	Some	Moderate	Extensive	
* Shrubs	None	Little	Some	Moderate	Extensive	
* Trees <10 m high	None	Little	Some	Moderate	Extensive	
* Trees >10 m high	None	Little	Some	Moderate	Extensive	
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive	
Width of continuous tree zone from bank:			Left bank m		Right bank m	
None = 0%	Little = 1–10%	Some = 10–50%	Moderate = 50–75%	Extensive >75%	* Can add to >100%	

Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name																															
Date	[1 4 0 4 2 0 2 1]	Project Name																													
Time (24 hrs)	[1 1 : 2 1]	QHSS Analysis No.	[]																												
Project Code	[]	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C		D	E	F	G	H	I	J	K	L	M	N																	
Run Code	[]	Received																													
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[1 | 6 | 1 | 1 | 5] <i>Sp: 193.5</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 6 | 1 | 3 ]	[ | | ]	2080.5
pH	[7 | 1 | 1 | 6 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 3 | 1 | 6] 2 % 37.0	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <i>+DS 126.10</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 1 | 0] <i>SAT: 0.09 ppt</i>	[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | | 0 | ] <i>ORP 148.1 mV</i>	[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | | 0 | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | | ]	[ | | ]	2046.5
Velocity m/s}	[ | 0 | | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | 0 | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover *NIL* Wind _____

Comments: *Fix*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *50* % Water Odour: *NIL*

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: *N* L S M E In water column: *N* *D* S M E

Macrophytes: Emergent: *N* L S M E Submerged: *N* L S M E

Floating: *N* L S M E

Impacts: Human N L S *M* E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [1 | 0 | 0] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score 3 Type LL Right bank: Score 3 Type LL

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 4.5 m Right bank 4.5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 5 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)		<u>L</u>			
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)			<u>S</u>		
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number B14 1.18 Sample Number [| | | | | | | | | | | |]
 Site Name _____
 Date [13/04/12] Project Name _____
 Time (24 hrs) [13:25] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	<u>[1614.18]</u> $\leftarrow$ specific <u>155.8</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	<u>[22.12 ]</u>	[ | | ]	2080.5
pH	<u>[7.70 ]</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>[51.77]</u> %: <u>66.6</u>	[ | | ]	2351.5
Turbidity NTU	[ | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] TDS: <u>106.6 mg/l</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ] <u>SAL 0.08 ppt</u>	[ | | ]	2046.5
Velocity m/s	[ | | ] <u>OEL 117.8 m/s</u>	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No ☒ Comments: _____
 Today: Rain _____ Cloud cover NIL Wind _____
 Comments: Five

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 60 % Water Odour: _____
 Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other _____
 Algae: On substrate: ☒ L S M E In water column: N L S M E
 Macrophytes: Emergent: ☒ L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N ☒ L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [100] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____
 (Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score 7 Type 4 Right bank: Score 3 Type 4

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other not found
Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 20 m Right bank 10 m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [ | | 3 / 0 | 4 / 2 | 0 | 2 | ]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [ | | 4 : | | 5]	
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted [A B C D E F G H I J K L M N]
Party [ | | ] [ | | ] [ | | ]	Received [ | | | | | ]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | . | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % **Water Odour:** _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural 2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number 5126/1-123 Sample Number [| | | | | | | | | | | |]

Site Name _____

Date [14/08/2012] Project Name _____

Time (24 hrs) [12:30] QHSS Analysis No. [| | | | |]

Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]

Run Code [| | | | |] Received [| | | | |]

Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[3 | 2 | 4 | . | 1 | 7] SPC: 351.3	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 0 | . | 1 | 5] TDS: 228.15	[ | | ]	2080.5
pH	[ . | 9 | . | 1 | 2 | 9] SAL: 0.17 ppt	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 7 | . | 1 | 7] % DO: 207.2	[ | | ]	2351.5
Turbidity NTU	[ | | | ] DEP: 105.5 mV	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from ☐ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No ☒ Comments: _____

Today: Rain _____ Cloud cover NUL Wind _____

Comments: Fl. 1.5

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: NUL

Water Surface Condition: Normal Slick Scum Foaming Other Algae from

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) 100 % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types)

Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow	Low	Moderate	High	Flood
(dry/isolated)	(<watermark)	(=watermark)	(>watermark)	

RIPARIAN ZONE (to maximum 100-m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number 132411-017 Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date [14/09/11] Project Name _____
 Time (24 hrs) [17:38] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | | |] Received [| | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[261.0] <u>235.8</u>	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[19.1 ]	[ | | | ]	2080.5
pH	[7.8 ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[8.1] <u>8%</u>	[ | | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | ] <u>TDS 170.30</u>	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | | ] <u>Sal 0.12 pp</u>	[ | | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | | ]	2046.5
Velocity m/s	[ | | | ] <u>DFP 161.8 mV</u>	[ | | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | | | ]	[ | | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No ☒ Comments: _____
 Today: Rain _____ Cloud cover 100% Wind _____
 Comments: F.I.N.E.

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20% Water Odour: N.L.L.

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [10/10] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score 3 Type LC Right bank: Score 3 Type LC

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other post flood
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run High Run
(circle all types) Undercut bank LWD Macrophytes None Other

Bars: (bed surface protruding from normal water level and forming a bar) 0.0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10 m Right bank 6.5 m

* Bare ground	None	<u>Little</u>	Some	Moderate	Extensive
* Grass	None	<u>Little</u>	Some	<u>Moderate</u>	Extensive
* Shrubs	None	<u>Little</u>	Some	Moderate	Extensive
* Trees <10 m high	None	<u>Little</u>	Some	Moderate	Extensive
* Trees >10 m high	None	<u>Little</u>	<u>Some</u>	Moderate	Extensive
Presence of exotic riparian species	None	<u>Little</u>	Some	Moderate	Extensive

Width of continuous tree zone from bank: Left bank 10 m Right bank 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	<u>S</u>	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	<u>Phragmites</u>	N	L	<u>S</u>	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [B261 1132] Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date [19/10/12 10:12] Project Name _____
 Time (24 hrs) [16:316] QHSS Analysis No. [| | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[ | 12165] $C = 241.2$	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2101.13 ]	[ | | ]	2080.5
pH	[7.54 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[151.92] 61.6%	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | 1.1] TDS 172.25	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ] 0.501 = 0.13 pH	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ] ORP - 159.1	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [X] Comments: _____
 Today: Rain _____ Cloud cover NIL Wind _____
 Comments: FINE

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30.00% Water Odour: NL
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| 100] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score 3 Type LS Right bank: Score 3 Type LS

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt OtherAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate ExtensiveWater odour: No Yes SpecifySubstrate odour: No Yes SpecifyWater surface: Normal Slick Scum Foaming OtherVariety of habitat: Shallow Deep Pool Run Riffle(circle all types) Undercut bank LWD Macrophytes OtherBars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)Width of riparian zone: Left bank 5 m Right bank 5 m* Bare ground None Little Some Moderate Extensive* Grass None Little Some Moderate Extensive* Shrubs None Little Some Moderate Extensive* Trees <10 m high None Little Some Moderate Extensive* Trees >10 m high None Little Some Moderate ExtensivePresence of exotic riparian species None Little Some Moderate ExtensiveWidth of continuous tree zone from bank: Left bank 5 m Right bank 5 m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	<u>M</u>	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	<u>S</u>	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	<i>Phragmites</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [BLG 1.24] Sample Number [| | | | | | | | | | | |]
 Site Name _____
 Date [14/04/2011] Project Name _____
 Time (24 hrs) [13:26] QHSS Analysis No. [| | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1185.2] SPL - 205.6	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[19.19]	[ | | ]	2080.5
pH	[7.11]	[ | | ]	2100.5
Dissolved O_2 mg/l	[13.97] 10 = 39.0%	[ | | ]	2351.5
Turbidity NTU	[ | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] TDS - 133.25	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ] SAL = 0.01	[ | | ]	2046.5
Velocity m/s	[ | | ] ORP = 139.8 mV	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [X] Comments: _____
 Today: Rain _____ Cloud cover N/L Wind _____
 Comments: Fine

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10% Water Odour: N/L
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E nymphal
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [100] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 Edge [| |] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____
 (Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

No change lots of nymphs

Native	N	L	S	M	E	Water Ribbon (<i>Tyglachin</i>)	N	L	S	M	E
Azolla											
Duckweed											
Hornwort (<i>Ceratophyllum</i>)											
Stoneworts (<i>Chara</i> or <i>Nitella</i>)											
Hydrilla											
Water Milfoil (<i>Myriophyllum</i>)											
Pondweeds (<i>Potamogeton</i>)											
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

Exotic	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)											
Salvinia											
Para Grass (<i>Urochloa</i>)											
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

Site Number [ | | | | | | ]	Sample Number [ | | | | | | | | | | | | | | | ]
Site Name _____	
Date [1 | 4 | 0 | 4 | 2 | 0 | 2 | 1]	Project Name _____
Time (24 hrs) [1 | 5 : 1 | 3]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | | ]	
Run Code [ | | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter		Value	Quality	Variable
Conductivity	$\mu\text{S/cm}@25^\circ\text{C}$	[2 | 5 | 0 | . | 3] SPC: 288.1	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$	[1 | 9 | . | 0] TD: 158.9	[ | | ]	2080.5
pH		[7 | . | 5] 6 SAC: 0.14	[ | | ]	2100.5
Dissolved O_2	mg/l	[16 | . | 6] 0 % 70.2	[ | | ]	2351.5
Turbidity	NTU	[ | | | ] ORP 176.2 mV	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m	[ | | . | | ]	[ | | ]	2046.5
Velocity	m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height	m	[ | | | . | | ]	[ | | ]	100.0
Discharge	m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: *Rain in past week:* Yes [] No [☒] Comments:

Today: Rain Cloud cover *W/L* Wind

Comments: *FINE*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 15% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E Exotic corn

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes [ | | ] % in: R %	E %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %	K %	S %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae [ | | ] % in: R %	E %
Edge	[ | | ] %			K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt [ | | ] %	

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *veg. wood*

Adjacent landuse: Left bank: Score Type Right bank: Score *3* Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand *Silt* Other *just flood*

Algae: On substrate: *None* Little Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: No *Yes* Specify *just flood silt*

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep *Pool* Run Riffle

(circle all types) Undercut bank *LWD* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) *0%* %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *moderate capacity*

*** Bare ground** None Little *Some* Moderate Extensive

*** Grass** None *Little* *Some* Moderate Extensive

*** Shrubs** None *Little* *Some* Moderate Extensive

*** Trees <10 m high** None *Little* *Some* Moderate Extensive

*** Trees >10 m high** None *Little* *Some* Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments: *Can be emergent*

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | | | |] Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date [1 | 4 | 0 | 4 | 2 | 0 | 2 | 1] Project Name _____
 Time (24 hrs) [1 | 5 : 5 | 5] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | | |] Submitted _____
 Run Code [| | | | | | |] Received _____
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2 | 3 | 7 | . | 1 | 8] <i>SPC: 259.3</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 0 | . | 1 | 7] <i>TDS: 168.35</i>	[ | | ]	2080.5
pH	[7 | 9 | . | 5] <i>Sal: 0.12</i>	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 8 | . | 3 | 0] <i>% 92.4</i>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <i>ORP: 170.6 mV</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged) obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: Rain in past week: Yes [] No [X] Comments: _____
Today: Rain _____ Cloud cover *100%* Wind _____
 Comments: *FM*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *0* % Water Odour: *nil*
Water Surface Condition: Normal Slick Scum Foaming Other _____
Algae: On substrate: *N* L S M E In water column: *N* L S M E
Macrophytes: Emergent: *N* *N* S M E Submerged: *N* L S M E
 Floating: *N* L S M E
Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [1 | 0 | 0] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None *Sand* Silt Other *bars - side*

Algae: On substrate: *None* Little Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: *Shallow* Deep Pool *Run* Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) *20* %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low *Moderate* High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *No change* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [5261 1/1-33] Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date [11/04/2021] Project Name _____
 Time (24 hrs) [17:03] QHSS Analysis No. [| | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | | | | | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2131.19] SPL 257.9	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[20.1] TDS: 167.70	[ | | ]	2080.5
pH	[7.7] SAL: 0.12	[ | | ]	2100.5
Dissolved O_2 mg/l	[7.1] % 78.5	[ | | ]	2351.5
Turbidity NTU	[ | | ] ORP 147.0mV	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [X] Comments: _____
Today: Rain _____ Cloud cover [W1] Wind _____
 Comments: FINE

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 80% **Water Odour:** NIL
Water Surface Condition: Normal Slick Scum Foaming Other _____
Algae: On substrate: N L S M E In water column: N D S M E
Macrophytes: Emergent: N D S M E Submerged: N D S M E
 Floating: N L S M E
Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [561] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [510] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks [W1 4/5] Blanketing silt [| |] %

COMMENTS: _____

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score 13.2 Type N-16 Right bank: Score 2 Type NW-IC

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 5 m Right bank 5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 5 m Right bank 5 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	<u>S</u>	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	<u>S</u>	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	<u>Phragmites</u>	N	<u>L</u>	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Site Number []	Sample Number []																														
Site Name _____																															
Date [15/04/2021]	Project Name _____																														
Time (24 hrs) [06:45]	QHSS Analysis No. []																														
Project Code []	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <th>Submitted</th> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th> </tr> <tr> <th>Received</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	Submitted	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Received														
Submitted		A	B	C	D	E	F	G	H	I	J	K	L	M	N																
Received																															
Run Code []																															
Party [] [] []																															

WATER QUALITY

Discharge Method: measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

Today: Rain Cloud cover VL Wind
 Comments: FINE

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: Dil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S ~~(M)~~ E Submerged: ~~(N)~~ L S M E

Floating: ~~N~~ L S M E

Impacts: Human N L S M ~~E~~ Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R %	E %
------------	-----------------	-----	-----------------	-------------	-----------------------------------	---------------

Pool (rocky-K) [] % Pool (sandy-S) [] % K % S % Run %

Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae	[ | | ] % in: R %	E %
-----	-----------------	----------------------------------	-------	-----------------------------------	---------------

Edge	[	|	|	]	%	K..... %	S..... %	Run..... %
------	---	--	--	---	---	----------	----------	------------

Blanketing silt [| |] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score 0 Type Urban Right bank: Score 7 Type CG

0. Urban/semi-urban, industrial
1. Irrigated cropping, intensive forestry or heavy grazing
2. Non-irrigated cropping, moderate grazing
3. Light grazing, vegetation clearing
4. Natural

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 5 m Right bank 5 m

* Bare ground	None	Little	<u>Some</u>	Moderate	Extensive
* Grass	None	Little	<u>Some</u>	Moderate	<u>Extensive</u>
* Shrubs	<u>None</u>	Little	Some	Moderate	Extensive
* Trees <10 m high	<u>None</u>	Little	Some	Moderate	Extensive
* Trees >10 m high	None	<u>Little</u>	Some	Moderate	Extensive
Presence of exotic riparian species	None	<u>Little</u>	Some	Moderate	Extensive

Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	<u>L</u>	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	<u>Phragmites</u>	N	L	S	M	<u>E</u>
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number B26 11-40 Sample Number [| | | | | | | | | | | |]
 Site Name _____
 Date [15/09/2012] Project Name _____
 Time (24 hrs) [017:215] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | | | | | | |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | 10519 | ] <u>4000 13375</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | 14.1 | ]	[ | | ]	2080.5
pH	[ | 10.47 | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | 19.5 | ] <u>92.8%</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] <u>78.5 87.1</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] <u>SAL 0.67</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ] <u>DRP 152.3</u>	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from ☐ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [X] Comments: _____
 Today: Rain _____ Cloud cover NIL Wind _____
 Comments: FINE

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 00% 0% Water Odour: NIL
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | 12 | 6 | ] %	Run [ | 8 | 6 | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score 3 Type LG Right bank: Score 3 Type LG

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWP Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 0 m Right bank 0 m

* Bare ground	None	Little	<u>Some</u>	Moderate	Extensive
* Grass	None	Little	Some	Moderate	<u>Extensive</u>
* Shrubs	<u>None</u>	Little	Some	Moderate	Extensive
* Trees <10 m high	<u>None</u>	Little	Some	Moderate	Extensive
* Trees >10 m high	<u>None</u>	Little	Some	Moderate	Extensive
Presence of exotic riparian species	<u>None</u>	Little	Some	Moderate	Extensive

Width of continuous tree zone from bank: Left bank 0 m Right bank 0 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [B2G 1142] Sample Number [| | | | | | | | | | | |]
 Site Name _____
 Date [15/10/2012] Project Name B2G Surface water monitoring
 Time (24 hrs) [08:15] QHSS Analysis No. [| | | | |]
 Project Code [5 | 1 | 1 | 4 | 8 | 1 |]
 Run Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | | | | | | |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | 6 | ] SPL 1399	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | 14 | 0 | 4] TDS 910.00	[ | | ]	2080.5
pH	[ | 8 | 0 | 3 | 9] SAL 0.71	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | 9 | 0 | 8 | ] % 97.4	[ | | ]	2351.5
Turbidity NTU	[ | | | ] ORP: 152.5 mV	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 0 | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | 0 | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | 0 | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | 0 | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from ☐ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [X] Comments: _____
Today: Rain _____ Cloud cover NIL Wind _____
 Comments: FINE

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 60 % Water Odour: NIL
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| | | 0] % Run [| 0 | 0] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 K % S % Run %
 Edge [| |] % Blanketing silt [| |] %
 Edge is % of habitat available to sample from L and R banks

COMMENTS: _____

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial *No Change* 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

No Change

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

No Change

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

.....

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	
Date [05/05/2011]	Project Name _____
Time (24 hrs) [17:31]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	Submitted [A B C D E F G H I J K L M N]
Run Code [ | | | | | ]	Received [ | | | | | ]
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[312.14] SPC 372.5	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[18.17 ]	[ | | ]	2080.5
pH	[4.09] TDS 291.80	[ | | ]	2100.5
Dissolved O_2 mg/l	[4.67] DO 50.0	[ | | ]	2351.5
Turbidity NTU	[ | | ] SAL 0.18	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] ORP 54.3	[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | . | ]	[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain Current rain Cloud cover 100% Wind _____
 Comments: downpour

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [4 | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [1 | 0 | 0] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
 Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

no change
 Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E
 Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E
 Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E
 Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E
 Hydrilla N L S M E Common Rush (*Juncus*) N L S M E
 Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E
 Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E
 Ribbonweed (*Vallisneria*) N L S M E N L S M E
 N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E
 Salvinia N L S M E Elodea N L S M E
 Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E
 N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |]

Site Name

Sample Number [| | | | | | | | | | | | | |]

Date [05/05/2012]

Time (24 hrs) [18:15]

Project Name

Project Code [| | | | |]

QHSS Analysis No. [| | | | |]

Run Code [| | | | |]

Party [| |] [| |] [| |]

Submitted

Received

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude

Reach orientation (looking downstream):

N

NE

E

SE

S

Longitude

SW

W

NW

Datum: _____

WATER QUALITY

Parameter

Value

Quality

Variable

Conductivity

 $\mu\text{S/cm @ } 25^\circ\text{C}$

[315.2] SPC 358.6

Water Temperature

 $^\circ\text{C}$

[18.17]

pH

[7.34]

Dissolved O_2

mg/l

[ER]

Turbidity

NTU

[| | |]

Air Temperature

 $^\circ\text{C}$

[| | |]

Total Alkalinity

mg/l CaCO_3

[| | |]

Phenol Alkalinity

mg/l CaCO_3

[| | |]

Transparency (secchi)

m

[| | |]

Velocity

m/s

[| | |]

Gauge Height

m

[| | |]

Discharge

 m^3/s

[| | |]

Discharge

Method:

measured

(gauged)

obtained from

rating curve

estimated:

no flow

trickle

>0.01 cumecs

WEATHER: Rain in past week:

Yes [X]

No []

Comments:

Today:

Rain

Current rain

Cloud cover

100%

Wind

Min.

Comments:

heavy downpour

OBSERVATIONS AT WATER SAMPLING SITE

(within 2 metres of sampling point or on closest bank)

Shading:

30%

Water Odour:

Nil

Water Surface Condition:

Normal

Slick

Scum

Foaming

Other

Algae:

On substrate:

L S M E

Macrophytes:

Emergent:

N L S M E

Floating:

N L S M E

In water column:

N L S M E

Submerged:

N L S M E

Impacts: Human

N L S M E

Pastoral animals

N L S M E

Non-pastoral animals

N L S M E

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)

[| |] %

Run

[| |] %

Pool (rocky-K)

[| |] %

Pool (sandy-S)

[100] %

Dry

[| |] %

Riffle + Run + Pool + Dry = 100%

Edge

[| |] %

Edge is % of habitat available to sample from L and R banks

Macrophytes

[| |] % in: R

E

K

S

Run

Algae

[| |] % in: R

E

K

S

Run

Blanketing silt

[| |] %

COMMENTS:

(Office use only) Entered into Hydsys

by

Entered into AQEIS

by

Checked on

by

Checked on

by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change* Right bank: Score Type

Adjacent landuse: Left bank: Score Type 3. Light grazing, vegetation clearing

0. Urban/semi-urban, industrial 4. Natural

1. Irrigated cropping, intensive forestry or heavy grazing

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* Some Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow *Deep* *Pool* Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species Left bank m Right bank m

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native	N	L	S	M	E		N	L	S	M	E
Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Site Number []	Sample Number []
Site Name _____	
Date [06 / 05 / 2012]	Project Name _____
Time (24 hrs) [08 : 44]	QHSS Analysis No. []
Project Code []	
Run Code []	Submitted
Party [] [] []	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[3 3 9 . 9] SPC 405.1	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 6 . 6] TDS 263.25	[]	2080.5
pH	[7 . 2]4 SAL 0.20	[]	2100.5
Dissolved O_2 mg/l	[5 . 0]9 DO%52.2	[]	2351.5
Turbidity NTU	[] ORP 134.0mV	[]	2030.5
Air Temperature $^\circ\text{C}$	[.]	[]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[.]	[]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0
Discharge Method: measured (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *05/06 + 10mm* Cloud cover *100%* Wind *14.1*

Comments:

Shading: 70 %		Water Odour: very low flow																
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E					
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E					
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R) [] %	Run [20] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [20] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: *None* Sand Silt Other

Algae: On substrate: *None* Little Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: *Shallow* Deep Pool *Run* *Little*

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow *Low* Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

*** Bare ground** None Little *Some* Moderate Extensive

*** Grass** None Little *Some* Moderate Extensive

*** Shrubs** None Little *Some* Moderate Extensive

*** Trees <10 m high** None Little *Some* Moderate Extensive

*** Trees >10 m high** None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [66611-16] Sample Number [| | | | | | | | | | | | | | | | | |]
 Site Name _____
 Date [06/05/2012] Project Name _____
 Time (24 hrs) [07:51] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | | |] Submitted _____
 Run Code [| | | | | | |] Received _____
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[318 | 0 | . | 4] TDS 297.05	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 6 | . | 2] SAL 0.22	[ | | ]	2080.5
pH	[7 | . | 2] 3 ORP 159.8	[ | | ]	2100.5
Dissolved O_2 mg/l	[4 | . | 9] 8 DO% 50.3	[ | | ]	2351.5
Turbidity NTU	[ | | | ] SPL 4.45	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain +20mm Cloud cover 100% Wind 10kph
 Comments: 0'cast

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 100% Water Odour: Nil
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 K % S % Run %
 Edge [| |] % Blanketing silt [| |] %
 Edge is % of habitat available to sample from L and R banks

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt OtherAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate ExtensiveWater odour: No Yes SpecifySubstrate odour: No Yes SpecifyWater surface: Normal Slick Scum Foaming OtherVariety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:

Left bank m

Right bank m

* Bare ground None Little Some Moderate Extensive* Grass None Little Some Moderate Extensive* Shrubs None Little Some Moderate Extensive* Trees <10 m high None Little Some Moderate Extensive* Trees >10 m high None Little Some Moderate ExtensivePresence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank:

Left bank m

Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water-Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [B261.7] Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date [05/05/2013] Project Name _____
 Time (24 hrs) [14:05] QHSS Analysis No. [| | | | | |]
 Project Code [| | | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | | |] Received [| | | | | | | | | | | | | |]
 Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[319.7 | .8] SPC 468.0	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[17.1 | ] TDS 304.2 mg/L	[ | | ]	2080.5
pH	[7.2 | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[6.15 | ] DO% 63.8	[ | | ]	2351.5
Turbidity NTU	[ | | ] SAL 0.23 ppt	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] ORP 146.2 mV	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain [X] Cloud cover 60% Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 60% Water Odour: Nil
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____
 (Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m
* Bare ground None Little Some Moderate Extensive
* Grass None Little Some Moderate Extensive
* Shrubs None Little Some Moderate Extensive
* Trees <10 m high None Little Some Moderate Extensive
* Trees >10 m high None Little Some Moderate Extensive
Presence of exotic riparian species None Little Some Moderate Extensive
Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain .. *Yes + 10 mm* .. Cloud cover .. *100* .. Wind .. *NE 4* ..

Comments:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *No change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None *Sand* Silt Other

Algae: On substrate: None Little *Some* Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick *Scum* Foaming Other

Variety of habitat: Shallow *Deep* *Pool* Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) *10* %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank *No change* m Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

Site Number []	Sample Number []																												
Site Name _____																													
Date [05/05/2021]	Project Name _____																												
Time (24 hrs) [15:19]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm}@25^{\circ}\text{C}$ []	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ [•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading:		% Water Odour:																								
Water Surface Condition:		Normal					Slick					Scum					Foaming					Other				
Algae:	On substrate:	N	L	S	M	E						In water column:	N	L	S	M	E									
Macrophytes:	Emergent:	N	L	S	M	E						Submerged:	N	L	S	M	E									
	Floating:	N	L	S	M	E																				
Impacts:	Human	N	L	S	M	E	Pastoral animals					N	L	S	M	E	Non-pastoral animals					N	L	S	M	E
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)									

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R %	E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K %	S %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R %	E %
Edge [] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %	Run %

COMMENTS:

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Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial						3. Light grazing, vegetation clearing					
1. Irrigated cropping, intensive forestry or heavy grazing						4. Natural					
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:		None	Little	Some	Moderate	Extensive					
Water colour:		Clear	Green	Opaque	Tannin	Other					
Sediment deposits:		None	Sand	Silt	Other	.....					
Algae: On substrate:		None	Little	Some	Moderate	Extensive					
In water column:		None	Little	Some	Moderate	Extensive					
Water odour:		No	Yes	Specify							
Substrate odour:		No	Yes	Specify							
Water surface:		Normal	Slick	Scum	Foaming	Other					
Variety of habitat:		Shallow	Deep	Pool	Run	Riffle					
(circle all types)		Undercut bank		LWD	Macrophytes	Other					
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		Low	Moderate	High	Flood						
(dry/isolated)		(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m				Right bank m					
* Bare ground		None	Little	Some	Moderate	Extensive					
* Grass		None	Little	Some	Moderate	Extensive					
* Shrubs		None	Little	Some	Moderate	Extensive					
* Trees <10 m high		None	Little	Some	Moderate	Extensive					
* Trees >10 m high		None	Little	Some	Moderate	Extensive					
Presence of exotic riparian species		None	Little	Some	Moderate	Extensive					
Width of continuous tree zone from bank:		Left bank m				Right bank m					
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

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(nr17621) 2/9/2002

COMMENTS:

COMMENTS:

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *no change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width) *no change*

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name	
Date [016/05/2018]	Project Name
Time (24 hrs) [11:31]	QHSS Analysis No. [ | | | | ]
Project Code [ | | | | ]	
Run Code [ | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[161.18] SPC 196.3	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[15.18] TDS 127.4	[ | | ]	2080.5
pH	[7.35] SAL 0.09	[ | | ]	2100.5
Dissolved O_2 mg/l	[5.125] DO% 52.7	[ | | ]	2351.5
Turbidity NTU	[ | | ] ORP 154.8 mV	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: _____

Today: Rain ☒ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: NC % Water Odour: U.I.

Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other _____

Algae: On substrate: N ☒ L ☐ S ☐ M ☐ E In water column: N ☒ L ☐ S ☐ M ☐ E

Macrophytes: Emergent: N ☒ L ☐ S ☐ M ☐ E Submerged: N ☒ L ☐ S ☐ M ☐ E

Impacts: Human N ☒ L ☐ S ☐ M ☐ E Pastoral animals N ☐ L ☐ S ☐ M ☐ E Non-pastoral animals N ☐ L ☐ S ☐ M ☐ E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [100] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____

Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ []	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ [•]	[]	2065.5
Total Alkalinity	$\text{mg}/\text{l CaCO}_3$ [•]	[]	2113.5
Phenol Alkalinity	$\text{mg}/\text{l CaCO}_3$ [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

Today: Rain Cloud cover Wind

Comments:

Shading:		Water Odour:																
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:		None	Little	Some	Moderate	Extensive					
Water colour:		Clear	Green	Opaque	Tannin	Other					
Sediment deposits:		None	Sand	Silt	Other						
Algae: On substrate:		None	Little	Some	Moderate	Extensive					
In water column:		None	Little	Some	Moderate	Extensive					
Water odour:		No	Yes	Specify							
Substrate odour:		No	Yes	Specify							
Water surface:		Normal	Slick	Scum	Foaming	Other					
Variety of habitat:		Shallow	Deep	Pool	Run	Riffle					
(circle all types)		Undercut bank		LWD	Macrophytes	Other					
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		Low		Moderate		High		Flood			
(dry/isolated)		(<watermark)		(=watermark)		(>watermark)					
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:			Left bank m			Right bank m					
* Bare ground			None	Little	Some	Moderate	Extensive				
* Grass			None	Little	Some	Moderate	Extensive				
* Shrubs			None	Little	Some	Moderate	Extensive				
* Trees <10 m high			None	Little	Some	Moderate	Extensive				
* Trees >10 m high			None	Little	Some	Moderate	Extensive				
Presence of exotic riparian species			None	Little	Some	Moderate	Extensive				
Width of continuous tree zone from bank:			Left bank m			Right bank m					
None = 0%			Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		
									* Can add to >100%		
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[3 0 0 . 6] SPC 359.1	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 6 . 5] TDS 234.00	[]	2080.5
pH	[7 . 9] 1 SAL 0.17	[]	2100.5
Dissolved O_2 mg/l	[8 . 2] 4 DO% 83.0	[]	2351.5
Turbidity NTU	[] ORP 152.1mV	[]	2030.5
Air Temperature $^\circ\text{C}$	[.]	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.]	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *yes + 10mm* Cloud cover *100%* Wind

Comments:

Shading: 40 %		Water Odour: Nil																
Water Surface Condition:		Normal			Slick			Scum			Foaming			Other				
Algae:	On substrate:	N	L	S	M	E	In water column:			N	L	S	M	E				
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:			N	L	S	M	E				
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)							

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R %	E %
Pool (rocky-K) [] %	Pool (sandy-S) [1 0 6] %	K %	S %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R %	E %
Edge [] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %	Run %

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REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *No change* Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate ExtensiveWater colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little *Some* Moderate ExtensiveIn water column: None Little *Some* Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep *Pool* Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little *Some* Moderate Extensive* Grass None Little *Some* Moderate Extensive* Shrubs None Little *Some* Moderate Extensive* Trees <10 m high None Little *Some* Moderate Extensive* Trees >10 m high None Little *Some* Moderate ExtensivePresence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S *M* E *no change* Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S *M* E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu S/cm @ 25^{\circ}C$	[1 8 2 . 1 8] SPC 216.9	[]	2010.5
Water Temperature $^{\circ}C$	[1 6 . 1 8] TDS 141.05	[]	2080.5
pH	[1 7 . 1 3] SAL 0.10	[]	2100.5
Dissolved O_2 mg/l	[2 . 7 4] DO% 28.4	[]	2351.5
Turbidity NTU	[] ORP 155.1	[]	2030.5
Air Temperature $^{\circ}C$	[.]	[]	2065.5
Total Alkalinity mg/l $CaCO_3$	[.]	[]	2113.5
Phenol Alkalinity mg/l $CaCO_3$	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain *gust +10 mph* Cloud cover *100%* Wind

Comments:

Shading: <u>W</u> %		Water Odour: <u>N</u>										
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other		
Algae:	On substrate:	N	<u>L</u>	S	M	E	In water column:	<u>N</u>	L	S	M	E
Macrophytes:	Emergent:	N	<u>L</u>	S	M	E	Submerged:	<u>N</u>	L	S	M	E
	Floating:	N	L	<u>S</u>	M	E						
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E
							Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)				

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks						Run %
				Blanketing silt	[] %	

COMMENTS:

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REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number 12411-127 Sample Number [| | | | | | | | | | | | | |]
 Site Name _____
 Date 06/05/2011 Project Name _____
 Time (24 hrs) 15:13 QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	<u>266.4</u> SPC <u>313.8</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	<u>17.1</u> TDS <u>204.10</u>	[ | | ]	2080.5
pH	<u>8.47</u> SAL <u>0.15</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	<u>8.32</u> DO% <u>87.2</u>	[ | | ]	2351.5
Turbidity NTU	<u>14.7</u> ORP <u>141.7</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain yes, 110mm Cloud cover 95% Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: BP S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| | 90] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 K % S % Run %
 Edge [| |] % Blanketing silt [| |] %
 Edge is % of habitat available to sample from L and R banks

COMMENTS: _____

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 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 30 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common-taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<u>no change</u> Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	<u>no change</u> Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[2 6 8 • 1 8] SPC 310.0	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 8 • 0] TDS 201.50	[]	2080.5
pH	[7 • 4] 9 SAL 0.15	[]	2100.5
Dissolved O_2 mg/l	[1 4 • 4] 1 DO% 46.7	[]	2351.5
Turbidity NTU	[] ORP 159.0	[]	2030.5
Air Temperature $^\circ\text{C}$	[•]	[]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[•]	[]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[•]	[]	2114.5
Transparency (secchi) m	[•]	[]	2046.5
Velocity m/s	[•]	[]	240.0
Gauge Height m	[•]	[]	100.0
Discharge m^3/s	[•]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain *Yiat +10mm* Cloud cover *100%* Wind *14, rd*

Comments:

Shading: 10 %		Water Odour:																
Water Surface Condition: Normal		Slick			Scum			Foaming			Other							
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)				S = 10-50% (some)				M = 50-75% (moderate)				E = >75% (extensive)				

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS:

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[27 1 . 3] SPC 318.5	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 7 . 2] TDS 207.35	[]	2080.5
pH	[8 . 5] 4 SAL 0.15	[]	2100.5
Dissolved O_2 mg/l	[8 . 4] 2 DO% 87.6	[]	2351.5
Turbidity NTU	[] GRP 140.5	[]	2030.5
Air Temperature $^\circ\text{C}$	[.]	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.]	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:
Today: Rain *yest. 1.0+ in* Cloud cover *60%* Wind *N. 12 mph*
 Comments:

Shading: 10 %		Water Odour: Nil	
Water Surface Condition:		Normal	Slick
		Scum	Foaming
		Other	Water outfall
Algae:	On substrate:	N	L S M E
	In water column:	N	L S M E
Macrophytes:	Emergent:	N	L S M E
	Submerged:	N	L S M E
	Floating:	N	L S M E
Impacts:	Human	N L S M E	Pastoral animals N L S M E
	Non-pastoral animals	N L S M E	
N = none		L = 1-10% (little)	
S = 10-50% (some)		M = 50-75% (moderate)	
E = >75% (extensive)			

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *no change* Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: *None* *Sand* Silt Other

Algae: On substrate: *None* Little Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum *Foaming* Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) *30* %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank *no change* m Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E *Water Ribbon (Triglochin)* N L S M E

Duckweed N L S M E *Water Lettuce (Pistia stratiotes)* N L S M E

Hornwort (*Ceratophyllum*) N L S M E *Water Primrose (Ludwigia)* N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E *Sedge (Cyperus)* N L S M E

Hydrilla N L S M E *Common Rush (Juncus)* N L S M E

Water Milfoil (*Myriophyllum*) N L S M E *Cumbungi (Typha)* N L S M E

Pondweeds (*Potamogeton*) N L S M E *Slender Knotweed (Persicaria)* N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E *Alligator Weed (Alternanthera)* N L S M E

Salvinia N L S M E *Elodea* N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



Site Number []	Sample Number []																														
Site Name _____																															
Date [06/08/2012]	Project Name _____																														
Time (24 hrs) [17:25]	QHSS Analysis No. []																														
Project Code []	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>Submitted</th> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th> </tr> <tr> <th>Received</th> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	Submitted	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Received														
Submitted		A	B	C	D	E	F	G	H	I	J	K	L	M	N																
Received																															
Run Code []																															
Party [] [] []																															

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}$ @ 25°C [2911.12] SCL 347.1	[]	2010.5
Water Temperature	°C [16.16] TDS 225.5	[]	2080.5
pH	[7.43] SAL 0.17	[]	2100.5
Dissolved O ₂	mg/l [15.99] DO% 57.4	[]	2351.5
Turbidity	NTU [] OKP 157.3	[]	2030.5
Air Temperature	°C [.]	[]	2065.5
Total Alkalinity	mg/l CaCO ₃ [.]	[]	2113.5
Phenol Alkalinity	mg/l CaCO ₃ [.]	[]	2114.5
Transparency (secchi)	m [.]	[]	2046.5
Velocity	m/s [.]	[]	240.0
Gauge Height	m [.]	[]	100.0
Discharge	m ³ /s [.]	[]	140.0

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated; ☐ no flow ☐ trickle ☐ >0.01 cumeecs

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *yes +10mm* Cloud cover *80%* Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] % Run [40] % Macrophytes [] % in: R % E %

Pool (rocky-K)	[1 | 1] %	Pool (sandy-S)	[6 | 0] %	K %	S %	Run %
----------------	-------------	----------------	-------------	---------------	---------------	-----------------

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge	[] %	K..... %	S..... %	Run..... %
------	-----------	----------	----------	------------

Blanketing silt [] %

COMMENTS:

COMMENTS:

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: no change

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[210.13] SPC 340.3	[]	2010.5
Water Temperature $^\circ\text{C}$	[17.3] TDS 221.00	[]	2080.5
pH	[7.59] SAL 0.16	[]	2100.5
Dissolved O_2 mg/l	[5.99] DO% 62.8	[]	2351.5
Turbidity NTU	[] ORP 144.8	[]	2030.5
Air Temperature $^\circ\text{C}$	[.]	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.]	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain ... *Yes + 10mm* Cloud cover ... *100* Wind

Comments:

Shading:		% Water Odour: <u>ND</u>																
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	<u>N</u>	L	S	M	E	In water column:		<u>N</u>	L	S	M	E					
Macrophytes:	Emergent:	N	L	<u>S</u>	M	E	Submerged:		<u>N</u>	L	S	M	E					
	Floating:	<u>N</u>	L	S	M	E												
Impacts:	Human	N	L	S	<u>M</u>	<u>E</u>	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R	 %	E	 %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K	 %	S	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%			Run	 %		
Edge	[] %			Algae	[] % in: R	 %	E	 %
Edge is % of habitat available to sample from L and R banks					K	 %	S	 %
					Run	 %		
				Blanketing silt	[] %			

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Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial *No change* 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive
Water colour: Clear Green *Opaque* Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank *No change* m Right bank m
* Bare ground None Little *Some* Moderate Extensive
* Grass None Little *Some* Moderate Extensive
* Shrubs None Little *Some* Moderate Extensive
* Trees <10 m high None Little *Some* Moderate Extensive
* Trees >10 m high None Little *Some* Moderate Extensive
Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

use chart
Azolla N L S M *E* Water Ribbon (*Triglochin*) N L S M E
Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E
Hornwort (*Ceratophyllum*) N L S M *E* Water Primrose (*Ludwigia*) N L S M E
Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E
Hydrilla N L S M E Common Rush (*Juncus*) N L S M E
Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E
Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E
Ribbonweed (*Vallisneria*) N L S M E N L S M E
..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E
Salvinia N L S M E Elodea N L S M E
Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E
..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name B2G 1-39 DUP2
 Date [7 / 5 / 21] Project Name _____
 Time (24 hrs) [17:52] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[719 | 0 | | ] SPC 9.85	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[14 | 0 | 6] TDS 648.50	[ | | ]	2080.5
pH	[7 | 1 | 9] SAL 0.49	[ | | ]	2100.5
Dissolved O_2 mg/l	[5 | 1 | 7] DO% 56.6	[ | | ]	2351.5
Turbidity NTU	[ | | | ] ORP 136.4	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 0 | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | 0 | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | 0 | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | 0 | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain no rain Cloud cover 90% Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 % Water Odour: W1
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N 1 S M E In water column: 2 L S M E
 Macrophytes: Emergent: N L S M 1 Submerged: 2 L S M E
 Floating: 1 L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [1 | 0 | 0] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____
 (Office use only) Entered into Hydsys / / by _____ Checked on / / by _____
 Entered into AQEIS / / by _____ Checked on / / by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other
Bars: (bed surface protruding from normal water level and forming a bar) %
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name	<u>B261-40</u>																														
Date	[07 10 52 02]	Project Name	<u></u>																												
Time (24 hrs)	[06 : 50]	QHSS Analysis No.	[]																												
Project Code	[]	Submitted	<table border="1"> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter		Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$	[6 | 6 | | ] SPL 855	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$	[1 | 3 | . | 4] TDS 552.5	[ | | ]	2080.5
pH		[ | 8 | . | 3] SAL 0.42	[ | | ]	2100.5
Dissolved O_2	mg/l	[ | 8 | . | 6] DO% 82.8	[ | | ]	2351.5
Turbidity	NTU	[ | | | ] ORP 149.7	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m	[ | | . | | ]	[ | | ]	2046.5
Velocity	m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height	m	[ | | | . | | ]	[ | | ]	100.0
Discharge	m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain *W/C gust* Cloud cover *20%* Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: <u>20</u> %		Water Odour: <u>Nil</u>																			
Water Surface Condition:		Normal				Slick				Scum				Foaming				Other			
Algae:	On substrate:	☒	L	S	M	E	In water column:				☒	L	S	M	E						
Macrophytes:	Emergent:		N	L	S	M	☒	Submerged:				☒	L	S	M	E					
	Floating:	☒	L	S	M	E															
Impacts:	Human	N	L	S	M	☒	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E			
N = none		L = 1-10% (little)				S = 10-50% (some)				M = 50-75% (moderate)				E = >75% (extensive)							

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %		K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R	 %	E	 %
Edge	[ | | ] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %		Run	 %

COMMENTS: _____

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Rifle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<u>no change</u> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *none yet* Cloud cover *100%* Wind

Comments: *W. coast*

Shading: 10 %		Water Odour: 2.4																
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E					
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E					
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R) [30] %	Run [70] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (Triglochin) N L S M E

Duckweed N L S M E Water Lettuce (Pistia stratiotes) N L S M E

Hornwort (Ceratophyllum) N L S M E Water Primrose (Ludwigia) N L S M E

Stoneworts (Chara or Nitella) N L S M E Sedge (Cyperus) N L S M E

Hydrilla N L S M E Common Rush (Juncus) N L S M E

Water Milfoil (Myriophyllum) N L S M E Cumbungi (Typha) N L S M E

Pondweeds (Potamogeton) N L S M E Slender Knotweed (Persicaria) N L S M E

Ribbonweed (Vallisneria) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (Eichhornia) N L S M E Alligator Weed (Alternanthera) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (Urochloa) N L S M E Egeria N L S M E

..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Conductivity
Cal reading: 1585 $\mu\text{S}/\text{cm}$
Actual: 1592 $\mu\text{S}/\text{cm}$

PH 7.0
Cal reading: 7.03
Actual reading: 6.97

Calibrate
pH: 10.0
Cal reading: 10.05
Actual: 10.14

pH 4:
Cal value: 4.00
Actual: 3.94



Queensland
Government
Natural Resources
and Mines

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | ]
Site Name	B2G WS 01.11		
Date	[2 | 6 | 0 | 5 | 2 | 0 | 2 | 1 | ]	Project Name	B2G baseline water sampling
Time (24 hrs)	[1 | 0 : 4 | 0 | ]	QHSS Analysis No.	[ | | | | | ]
Project Code	[5 | 1 | 1 | 8 | 4 | 1 | ]	Submitted	[A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[3 | 4 | 4 | 5] SPL: 276.0 $\mu\text{S}/\text{cm}$	[ | | ]	2010.5
Water Temperature °C	[1 | 4 | 1 | 3] TDS 222.95 mg	[ | | ]	2080.5
pH	[7 | 1 | 1 | 3 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[ | | 1 | 3] DO% 32.0	[ | | ]	2351.5
Turbidity NTU	[ | | | ] DO mg: 3.24	[ | | ]	2030.5
Air Temperature °C	[ | | 1 | 3 ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | | 1 | ] SAL: 0.17 ppt	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | | 1 | ] DRP: 144.8	[ | | ]	2114.5
Transparency (secchi) m	[ | | 1 | 3 ]	[ | | ]	2046.5
Velocity m/s	[ | 1 | | ]	[ | | ]	240.0
Gauge Height m	[ | | | 1 | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | | 1 | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____
Today: Rain No Cloud cover Some (3/8) Wind Very light
Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 60 % Water Odour: Nil

Water Surface Condition:	Normal	Slick	Scum	Foaming	Other
Algae:	On substrate: (N) L S M E	In water column: (N) L S M E			
Macrophytes:	Emergent: N (L) S M E	Submerged: N (L) S M E			
	Floating: (N) L S M E				
Impacts:	Human (N) L S M E	Pastoral animals (N) L S M E	Non-pastoral animals (N) L S M E		

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by ____ Checked on ____/____/____ by ____
Entered into AQEIS ____/____/____ by ____ Checked on ____/____/____ by ____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other Very Turbid

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 15 m Right bank 15 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 30 m Right bank 30 m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

[illegible]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$ [ | | | | ] SPL: 499.2 $\mu\text{S/cm}$	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$ [1 | 4 | . | 3] C: 396.6 $\mu\text{S/cm}$	[ | | ]	2080.5
pH	[ | 7 | . | 2 | 7 ]	[ | | ]	2100.5
Dissolved O_2	mg/l} [ | 4 | . | 8 | 9] % 47.5	[ | | ]	2351.5
Turbidity	NTU [ | | | | ] TDS mg 324.35	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | . | | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | . | | ] SAL: 0.24 ppt	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | . | | ] ORP: 134.6	[ | | ]	2114.5
Transparency (secchi)	m [ | | . | | ]	[ | | ]	2046.5
Velocity	m/s} [ | . | | ]	[ | | ]	240.0
Gauge Height	m [ | | | . | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [✓] Comments:
Today: Rain *Nil* Cloud cover *Light (1/8)* Wind *Nil*
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 70 %		Water Odour: Nil										
Water Surface Condition: Normal		Slick		Scum			Foaming			Other		
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E
	Floating:	N	L	S	M	E						
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E
							Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)				

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
 Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank ... 5 ... m Right bank ... 5 ... m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank ... 50 ... m Right bank ... 20 ... m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B264 WOL. 2R</u>	
Date [2 | 6 | 0 | 5 | 2 | 0 | 2 | 1]	Project Name <u>B264 basaltic water sampling</u>
Time (24 hrs) [5 : 5 | 1]	QHSS Analysis No. [ | | | | | ]
Project Code [5 | 1 | 3 | 4 | 1]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY			
Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[ | | | | ] <u>SPC: 359.0 $\mu\text{S/cm}$</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 6 | . | 8] <u>C: 302.8 $\mu\text{S/cm}$</u>	[ | | ]	2080.5
pH	[7 | . | 5] <u>DO: 233, 35</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ] <u>DO%: 62.6</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <u>DO: 6.06 mg/L</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] <u>SAL: 0.17 ppm</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] <u>ORP: 49.7 mV</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____
 Today: Rain Nil Cloud cover Light (1/8) Wind N1
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name	B2GWS01.2		
Date	[2 | 6 | 0 | 5 | 2 | 0 | 2 | 1]	Project Name	B2G baseline water sampling
Time (24 hrs)	[1 | 6 : 1 | 5]	QHSS Analysis No.	[ | | | | | ]
Project Code	[5 | 1 | 1 | 8 | 4 | 1 | ]	Submitted	[A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ] 364.4 $\mu\text{S}/\text{cm}$	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 6 | . | 8] 306.8 $^\circ\text{C}$	[ | | ]	2080.5
pH	[7 | . | 3 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[6 | . | 4] DO% 66.2	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] TDS 236.60	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] SAL 0.17	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ] \text{pORP 17.5	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____

Today: Rain _____ Nil _____ Cloud cover _____ Moderate (4/8) _____ Wind _____ Nil _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 % Water Odour: Nil

Water Surface Condition: Normal ☒ Slick ☒ Scum ☐ Foaming ☐ Other: Potential hydrocarbon

Algae: On substrate: (N) L S M E In water column: (N) L S M E

Macrophytes: Emergent: N L (S) M E Submerged: (N) L S M E

Floating: (N) L S M E

Impacts: Human N (L) S M E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: Some white deposits on edge of river on right bank, orange deposits on edge of left bank

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify Mild manure / mud

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank .. 20 m Right bank .. 30 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank .. 30 m Right bank .. 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

PH 7. Calibration:
Cal reading: 7.07
AEF003 Actual: 7.10

PH 4:
Cal reading: 4.00
Actual reading 3.96

PH 10
Cal reading: 10.17
Actual reading: 10.04



Queensland
Government
Natural Resources
and Mines

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | | ]	Sample Number	[ | | | | | | | | | | | | ]				
Site Name	B24W501.6						
Date	21/7/05/2012		Project Name	B24 water quality monitoring			
Time (24 hrs)	[08:05]		QHSS Analysis No.	[ | | | | | ]			
Project Code	[5 | | | | 8 | 4 | | ]			Submitted	[A B C D E F G H I J K L M N]		
Run Code	[ | | | | | ]			Received	[ | | | | | ]		
Party	[ | | ] [ | | ] [ | | ]						

SAMPLING LOCATION: Latitude _____ Longitude _____
Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | ] SPL: 555.0	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[13 | 0 | 3] C: 431.3	[ | | ]	2080.5
pH	[7 | 5 | 0 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | 0] DO% 56.6	[ | | ]	2351.5
Turbidity NTU	[ | | | ] DO mg/L: 5.92	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 0 ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | 0] TDS: 360.75	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | 0] SAL: 0.27 ppt	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | | ] ORP: 160.6 mV	[ | | ]	240.0
Gauge Height m	[ | | | 0 | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | 0 | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____
Today: Rain _____ Cloud cover Light (2/8) Wind Nil
Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: (N) L S M E In water column: (N) L S M E

Macrophytes: Emergent: N L S (M) E Submerged: (N) L S M E

Floating: (N) L S M E

Impacts: Human (N) L S M E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
Entered into AQEIS _____ by _____ Checked on _____ by _____



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name <u>B2GWS01.3</u>	
Date [2 | 7 | 0 | 5 | 2 | 0 | 2 | 1]	Project Name <u>B2G baseline water monitoring</u>
Time (24 hrs) [0 | 8 : 4 | 9]	QHSS Analysis No. [ | | | | | ]
Project Code [5 | 1 | 1 | 8 | 4 | 1 | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | | ] <u>SPE 424.3</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 3 | . | 7] <u>C: 332.5</u>	[ | | ]	2080.5
pH	[7 | . | 3] <u>7</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | | ] <u>DO%: 56.6</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | | ] <u>DO mg/l 5.86</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] <u>TDS: 275.6 mg/l</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ] <u>SAT: 0.21 ppt</u>	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ] <u>ORP: 142.4 mV</u>	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged)	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [✓] **Comments:** _____

Today: Rain Nil Cloud cover Nil Wind Nil

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 % **Water Odour:** Nil

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N (L) S M E In water column: (N) L S M E

Macrophytes: Emergent: N (L) S M E Submerged: N L (S) M E

Floating: (N) L S M E

Impacts: Human (N) L S M E Pastoral animals (N) L S M E Non-pastoral animals (N) L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify Marine / murch

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* **Bare ground** None Little Some Moderate Extensive

* **Grass** None Little Some Moderate Extensive

* **Shrubs** None Little Some Moderate Extensive

* **Trees <10 m high** None Little Some Moderate Extensive

* **Trees >10 m high** None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 30 m Right bank 20 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name	B2G WSD 16																														
Date	[2 7 10 5 2 0 2 1]	Project Name	B2G baseline water sampling.																												
Time (24 hrs)	[1 0 : 0 0]	QHSS Analysis No.	[]																												
Project Code	[5 1 1 8 4 1]	Submitted	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[]	Received	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ] SPC: 212.1 $\mu\text{S}/\text{cm}$	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 4 | . | 0] C: 16.8 $\mu\text{S}/\text{cm}$	[ | | ]	2080.5
pH	[7 | . | 5 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ] DO% 4.7 $\rightarrow$ 46.1	[ | | ]	2351.5
Turbidity NTU	[ | | | ] DO mg/l: 4.74	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] TDS: 137.80	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ] SAL: 0.10 ppt	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ] DRP: 143.2 mV	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged) obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: Rain in past week: Yes [] No [✓] Comments: _____
 Today: Rain Nil Cloud cover Very light (15%) Wind Light
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 50 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10.5 m Right bank 5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 10 m Right bank 15 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name <u>B2G W501, 18</u>	
Date [27/05/2021]	Project Name <u>B2G base line water sampling</u>
Time (24 hrs) [10:46]	QHSS Analysis No. [ | | | | | ]
Project Code [51811841]	
Run Code [ | | | | | ]	Submitted [A B C D E F G H I J K L M N]
Party [ | | ] [ | | ] [ | | ]	Received [ | | | | | ]

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ [ | | | | ]	<u>SPL: 148.6 $\mu\text{S}/\text{cm}$</u>	[ | | ]	2010.5
Water Temperature $^{\circ}\text{C}$ [12.1]	<u>DO% 31.5</u>	[ | | ]	2080.5
pH [7.45]	<u>DO: 3.40 mg/L}</u>	[ | | ]	2100.5
Dissolved O_2 mg/L} [ | | | ]	<u>C: 149.6</u>	[ | | ]	2351.5
Turbidity NTU [ | | | ]		[ | | ]	2030.5
Air Temperature $^{\circ}\text{C}$ [ | | | ]	<u>TDS: 129.35 mg/L}</u>	[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{L CaCO}_3$ [ | | | | ]	<u>SAL: 0.09 ppt</u>	[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{L CaCO}_3$ [ | | | | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | | | ]	<u>ORP: 151.4 mV</u>	[ | | ]	2046.5
Velocity m/s} [ | | | ]		[ | | ]	240.0
Gauge Height m [ | | | | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | | ]		[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No ☒ Comments: _____
 Today: Rain Nil Cloud cover Nil Wind Light
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 60 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | | | ]
Site Name	B2LWS01-14		
Date	[2 | 7 | 0 | 5 | 2 | 0 | 2 | 1]	Project Name	B2L baseline water sampling
Time (24 hrs)	[0 | 9 : 5 | 0]	QHSS Analysis No.	[ | | | | | ]
Project Code	[5 | 1 | 1 | 8 | 4 | 1 | ]	Submitted	[A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^{\circ}\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^{\circ}\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^{\circ}\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____
 Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type 0. Urban/semi-urban, industrial 1. Irrigated cropping, intensive forestry or heavy grazing 2. Non-irrigated cropping, moderate grazing 3. Light grazing, vegetation clearing 4. Natural											
Local catchment erosion:		None	Little	Some	Moderate	Extensive					
Water colour:		Clear	Green	Opaque	Tannin	Other					
Sediment deposits:		None	Sand	Silt	Other						
Algae: On substrate:		None	Little	Some	Moderate	Extensive					
In water column:		None	Little	Some	Moderate	Extensive					
Water odour:		No	Yes	Specify							
Substrate odour:		No	Yes	Specify							
Water surface:		Normal	Slick	Scum	Foaming	Other					
Variety of habitat:		Shallow	Deep	Pool	Run	Riffle					
(circle all types)		Undercut bank		LWD	Macrophytes	Other					
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types). No flow Low Moderate High Flood (dry/isolated) (<watermark) (=watermark) (>watermark)											
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m				Right bank m					
* Bare ground		None	Little	Some	Moderate	Extensive					
* Grass		None	Little	Some	Moderate	Extensive					
* Shrubs		None	Little	Some	Moderate	Extensive					
* Trees <10 m high		None	Little	Some	Moderate	Extensive					
* Trees >10 m high		None	Little	Some	Moderate	Extensive					
Presence of exotic riparian species		None	Little	Some	Moderate	Extensive					
Width of continuous tree zone from bank:		Left bank m				Right bank m					
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Comments:											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | | | |]
 Site Name B2GWSO 1.20 R2
 Date [27/05/2021] Project Name B2G Baseline water sampling
 Time (24 hrs) [11:30] QHSS Analysis No. [| | | | |]
 Project Code [215111841]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[ | | | | ] <u>576.765 $\mu\text{S/cm}$</u> <u>C: 582 $\mu\text{S/cm}$</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[12.2] <u>76.8</u>	[ | | ]	2080.5
pH	[8.9] <u>DO: 7.69</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | . | ] <u>DO: 8.19 mg/L</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] <u>TDS: 494.00 mg/L</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] <u>SAL: 0.38 ppt</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ] <u>ORP: 118.0 mV</u>	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes [] No [✓] Comments: _____
 Today: Rain Nil Cloud cover Nil Wind Light
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 50 % Water Odour: Nil
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: (N) L S M E In water column: N L S M E
 Macrophytes: Emergent: N L (S) M E Submerged: (N) L S M E
 Floating: (N) L S M E
 Impacts: Human (N) L S M E Pastoral animals N (L) S M E Non-pastoral animals (N) L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank ... 2 ... m Right bank ... 10 ... m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank ... 10 ... m Right bank ... 10 ... m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[] [] [] [] [] [] [] []	Sample Number	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
Site Name	B2GWS01.23		
Date	[2] [7] [0] [5] [2] [0] [2] [1]	Project Name	B2G baseline water sampling
Time (24 hrs)	[1] [2] [1] [7]	QHSS Analysis No.	[] [] [] [] [] [] [] []
Project Code	[5] [1] [1] [1] [8] [2] [1] [1]	Submitted	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
Run Code	[] [] [] [] [] [] [] []	Received	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
Party	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[] [] [] [] [] [] [] [] <i>SPC: 341.7 $\mu\text{S}/\text{cm}$</i>	[] [] []	2010.5
Water Temperature °C	[1] [4] [0] [0] <i>W: 270.0 $\mu\text{S}/\text{cm}$</i>	[] [] []	2080.5
pH	[7] [0] [8] [6] <i>% DO: 19.2</i>	[] [] []	2100.5
Dissolved O ₂ mg/l	[] [] [] [] [] [] <i>DO: 1.95</i>	[] [] []	2351.5
Turbidity NTU	[] [] [] [] [] []	[] [] []	2030.5
Air Temperature °C	[] [] [] [] [] [] <i>TDS: 222.3 mg/L</i>	[] [] []	2065.5
Total Alkalinity mg/l CaCO ₃	[] [] [] [] [] [] <i>SAL: 0.16 ppt</i>	[] [] []	2113.5
Phenol Alkalinity mg/l CaCO ₃	[] [] [] [] [] []	[] [] []	2114.5
Transparency (secchi) m	[] [] [] [] [] [] <i>ORP: 112.0 mV</i>	[] [] []	2046.5
Velocity m/s	[] [] [] [] [] []	[] [] []	240.0
Gauge Height m	[] [] [] [] [] []	[] [] []	100.0
Discharge m ³ /s	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []	[] [] []	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [✓] Comments: _____
 Today: Rain *Nil* Cloud cover *Nil* Wind *Light / light gusts*
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *100* % Water Odour: *Nil*

Water Surface Condition: Normal Slick Scum Foaming Other *Some upstreams slick on surface.*

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] [] [] %	Run [] [] [] %	Macrophytes [] [] [] % in: R % E %
Pool (rocky-K) [] [] [] %	Pool (sandy-S) [] [] [] %	K % S % Run %
Dry [] [] [] %	Riffle + Run + Pool + Dry = 100%	Algae [] [] [] % in: R % E %
Edge [] [] [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] [] [] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____



WATER QUALITY SAMPLING FIELD SHEET

[illegible]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[ | | | | ] SPC: 269.1 $\mu\text{S/cm}$	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[14 | 0 | 5] C: 215.3	[ | | ]	2080.5
pH	[7 | 0 | 2] 8 % DO: 221 26.5	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | 0 | ] DO: 100.0	[ | | ]	2351.5
Turbidity NTU	[ | | | ] 2.75 mg/L	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 0 | ] TDS: 174.85 mg/L	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | 0 | ] SAL: 0.13 ppt	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | 0 | ] ORP: 142.2 mv	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | 0 | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [☒] Comments:

Today: Rain Nil Cloud cover Nil Wind Light - moderate -
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 %		Water Odour: Nil																		
Water Surface Condition: Normal		Slick		Scum		Foaming		Other												
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E							
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E							
	Floating:	N	L	S	M	E														
Impacts: Human		N	L	S	M	E	Pastoral animals		N	L	S	M	E	Non-pastoral animals		N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)												

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R %	E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K %	S %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R %	E %
Edge [ | | ] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %	Run %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 5 m Right bank 5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 20 m Right bank 20 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank ... 25 ... m Right bank ... 25 ... m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank ... 25 ... m Right bank ... 25 ... m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name <u>B2G WSO1.29</u>	
Date [27/05/2012]	Project Name <u>B2G basin water sampling</u>
Time (24 hrs) [14:25]	QHSS Analysis No. [ | | | | | ]
Project Code [51118411]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$ [ | | | | ]	<u>SPC: 277.9 $\mu\text{S/cm}$</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [14.18]	<u>C: 224.5 $\mu\text{S/cm}$</u>	[ | | ]	2080.5
pH [7.47]	<u>DO% = 26.1</u>	[ | | ]	2100.5
Dissolved O_2 mg/l [ | | . | ]	<u>DO: 2.65 mg/L</u>	[ | | ]	2351.5
Turbidity NTU [ | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]	<u>TDS: 180.70 mg/L</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3 [ | | | . | ]	<u>SAL: 0.13 ppt</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]	<u>ORP: 139.8 mV</u>	[ | | ]	2046.5
Velocity m/s [ | . | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | ]		[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____

Today: Rain Nil Cloud cover Nil Wind Moderate

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 70 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____

Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 20 m Right bank 5 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 20 m Right bank 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | | | | |]
 Site Name B2GWS01.30
 Date [2 | 7 | 0 | 5 | 2 | 0 | 2 | 1] Project Name B2G barshi water monitoring
 Time (24 hrs) [1 | 5 : 0 | 5] QHSS Analysis No. [| | | | |]
 Project Code [5 | 1 | 1 | 8 | 4 | 1 |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ] <u>SPC: 325.3</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 4 | . | 7] <u>C: 26.4</u>	[ | | ]	2080.5
pH	[8 | . | 0 | 9 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ] <u>DO% 80.6</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <u>DO: 8.09 mg/l</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] <u>SP</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] <u>TDS: 211.25 mg/l</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ] <u>SAV: 0.16 ppt</u>	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ] <u>DRP: 132.7 m/s</u>	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [✓] Comments: _____
 Today: Rain Nil Cloud cover Nil Wind Light - moderate
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 % Water Odour: Nil
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____
 Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

- | | |
|--|---------------------------------------|
| 0. Urban/semi-urban, industrial | 3. Light grazing, vegetation clearing |
| 1. Irrigated cropping, intensive forestry or heavy grazing | 4. Natural |
| 2. Non-irrigated cropping, moderate grazing | |

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal ☐ Slick ☐ Scum ☐ Foaming ☐ Other ☐

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow	Low	Moderate	High	Flood
(dry/isolated)	(<watermark)	(=watermark)	(>watermark)	

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 20 m Right bank 20 m

* Bare ground None Little Some Moderate Extensive

	None	Little	Some	Moderate	Extensive
* Grass					

	None	Little	Some	Moderate	Extensive
* Shrubs					

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank .. 20 .. m Right bank .. 20 .. m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					

	N	L	S	M	E		N	L	S	M	E
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					

Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
-----------------------------------	---	---	---	---	---	------------------------------------	---	---	---	---	---

Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
---	---	---	---	---	---	--------------------------	---	---	---	---	---

Hydrilla	N	L	S	M	F	Common Rush (<i>Juncus</i>)	N	L	S	M	F
----------	---	---	---	---	---	-------------------------------	---	---	---	---	---

Water Milfoil (<i>Myriophyllum</i>)	N	I	S	M	E	Cumbungi (<i>Typha</i>)	N	I	S	M	E
---------------------------------------	---	---	---	---	---	---------------------------	---	---	---	---	---

Roadweeds (<i>Potamogeton</i>)	N	I	S	M	F	Slender Knotweed (<i>Persicaria</i>)	N	I	S	M	F
----------------------------------	---	---	---	---	---	--	---	---	---	---	---

Ribbonwood (<i>Collinsia</i>)	N	I	S	M	E
---------------------------------	---	---	---	---	---

1980-1984 (1980-1984)	N	E	S	W	E	1985-1989 (1985-1989)	N	E	S	W	E
	N	L	S	M	E		N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
--------------------------------------	---	---	---	---	---	---	---	---	---	---	---

Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
----------	---	---	---	---	---	--------	---	---	---	---	---

Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>		N	L	S	M	E
--------------------------------	---	---	---	---	---	---------------	--	---	---	---	---	---

	N	L	S	M	E		N	L	S	M	I
--	---	---	---	---	---	--	---	---	---	---	---

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [] No [☒] Comments:

Today: Rain *Nil* Cloud cover *Nil* Wind *Moderate*
Comments:

Shading: 50 %		Water Odour: Nil											
Water Surface Condition: Normal		Slick			Scum			Foaming			Other		
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E	
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E	
	Floating:	N	L	S	M	E							
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	
							Non-pastoral animals	N	L	S	M	E	
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)					

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	Run %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank .. 20 ... m Right bank .. 5 ... m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank .. 25 ... m Right bank .. 30 ... m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

AEF003

WATER QUALITY SAMPLING FIELD SHEET



Site Number	[]	Sample Number	[]																												
Site Name	B26 WSOL 39																														
Date	[2 8 0 5 2 0 2 1]	Project Name	B26 baseline water sampling																												
Time (24 hrs)	[0 6 : 0 0]	QHSS Analysis No.	[]																												
Project Code	[5 1 1 8 4 1]	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[ | | | | ]	SPL: 1774 $\mu\text{S/cm}$ [ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[14 | . | 4]	C: 14.15 $^\circ\text{C}$ [ | | ]	2080.5
pH	[7 | . | 9]	DO: 0.9 mg/L} [ | | ]	2100.5
Dissolved O_2 mg/l}	[ | | . | ]	DO: 0.9 mg/L} [ | | ]	2351.5
Turbidity NTU	[ | | | | ]	7.25 [ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	TDS: 1150.50 mg/L} [ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	SAL: 0.90 ppt [ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	ORP: 189.4 mV [ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [] No [✓] Comments:
Today: Rain *Nil* Cloud cover *Nil* Wind *Very light*
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 0 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: ~~N~~ L S M E In water column: N L S M E

Macrophytes: Emergent: ~~N~~ L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R		%	E		%
------------	---	--	--	---	---	-----	---	--	--	---	---	-------------	---	--	--	---	---------	-------	---	---	-------	---

Pool (rocky-K)	[	|	|	|	%	Pool (sandy-S)	[	|	|	|	%	K %	S %	Run %
----------------	---	--	--	--	---	----------------	---	--	--	--	---	---------------	---------------	-----------------

Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae	[ | | ] % in: R %	E %
-----	-----------------	----------------------------------	-------	-----------------------------------	---------------

Edge	[	|	|	]	%	K..... %	S..... %	Run..... %
------	---	--	--	---	---	----------	----------	------------

Edge is % of habitat available to sample from L and R banks

Blanketing silt [1 1] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

- | | |
|--|---------------------------------------|
| 0. Urban/semi-urban, industrial | 3. Light grazing, vegetation clearing |
| 1. Irrigated cropping, intensive forestry or heavy grazing | 4. Natural |
| 2. Non-irrigated cropping, moderate grazing | |

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: ☒ Shallow ☐ Deep ☐ Pool ☐ Run ☐ Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow (dry/isolated)	Low ($<$ watermark)	Moderate (=watermark)	High ($>$ watermark)	Flood
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RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank .. 15 m Right bank .. 15 m

* Bare ground	None	Little	Some	Moderate	Extensive
---------------	------	--------	------	----------	-----------

	None	Little	Some	Moderate	Extensive
* Grass					

* Shrubs	None	Little	Some	Moderate	Extensive
1. <i>Juniperus communis</i>					
2. <i>Juniperus horizontalis</i>					
3. <i>Juniperus procumbens</i>					
4. <i>Juniperus horizontalis</i>					
5. <i>Juniperus communis</i>					
6. <i>Juniperus communis</i>					
7. <i>Juniperus communis</i>					
8. <i>Juniperus communis</i>					
9. <i>Juniperus communis</i>					
10. <i>Juniperus communis</i>					
11. <i>Juniperus communis</i>					
12. <i>Juniperus communis</i>					
13. <i>Juniperus communis</i>					
14. <i>Juniperus communis</i>					
15. <i>Juniperus communis</i>					
16. <i>Juniperus communis</i>					
17. <i>Juniperus communis</i>					
18. <i>Juniperus communis</i>					
19. <i>Juniperus communis</i>					
20. <i>Juniperus communis</i>					
21. <i>Juniperus communis</i>					
22. <i>Juniperus communis</i>					
23. <i>Juniperus communis</i>					
24. <i>Juniperus communis</i>					
25. <i>Juniperus communis</i>					
26. <i>Juniperus communis</i>					
27. <i>Juniperus communis</i>					
28. <i>Juniperus communis</i>					
29. <i>Juniperus communis</i>					
30. <i>Juniperus communis</i>					
31. <i>Juniperus communis</i>					
32. <i>Juniperus communis</i>					
33. <i>Juniperus communis</i>					
34. <i>Juniperus communis</i>					
35. <i>Juniperus communis</i>					
36. <i>Juniperus communis</i>					
37. <i>Juniperus communis</i>					
38. <i>Juniperus communis</i>					
39. <i>Juniperus communis</i>					
40. <i>Juniperus communis</i>					
41. <i>Juniperus communis</i>					
42. <i>Juniperus communis</i>					
43. <i>Juniperus communis</i>					
44. <i>Juniperus communis</i>					
45. <i>Juniperus communis</i>					
46. <i>Juniperus communis</i>					
47. <i>Juniperus communis</i>					
48. <i>Juniperus communis</i>					
49. <i>Juniperus communis</i>					
50. <i>Juniperus communis</i>					
51. <i>Juniperus communis</i>					
52. <i>Juniperus communis</i>					
53. <i>Juniperus communis</i>					
54. <i>Juniperus communis</i>					
55. <i>Juniperus communis</i>					
56. <i>Juniperus communis</i>					
57. <i>Juniperus communis</i>					
58. <i>Juniperus communis</i>					
59. <i>Juniperus communis</i>					
60. <i>Juniperus communis</i>					
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63. <i>Juniperus communis</i>					
64. <i>Juniperus communis</i>					
65. <i>Juniperus communis</i>					
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67. <i>Juniperus communis</i>					
68. <i>Juniperus communis</i>					
69. <i>Juniperus communis</i>					
70. <i>Juniperus communis</i>					
71. <i>Juniperus communis</i>					
72. <i>Juniperus communis</i>					
73. <i>Juniperus communis</i>					
74. <i>Juniperus communis</i>					
75. <i>Juniperus communis</i>					
76. <i>Juniperus communis</i>					
77. <i>Juniperus communis</i>					
78. <i>Juniperus communis</i>					
79. <i>Juniperus communis</i>					
80					

* Trees <10 m high None Little Some Moderate Extensive

	None	Little	Some	Moderate	Extensive
* Trees >10 m high					

	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	☒	☐	☐	☐	☐

Width of continuous tree zone from bank: Left bank 15 m Right bank 15 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					

Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
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Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
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Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
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Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
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Water Milfoil (<i>Myriophyllum</i>)	N	I	S	M	E	Cumbungi (<i>Typha</i>)	N	I	S	M	E
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Pondweeds (<i>Potamogeton</i>)	N	I	S	M	F	Slender Knotweed (<i>Persicaria</i>)	N	I	S	M	F
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Ribbonweed (<i>Vallisneria</i>)	N	I	S	M	E		N	I	S	M	E
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	N	L	S	M	E		N	L	S	M	E
--	---	---	---	---	---	--	---	---	---	---	---

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
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Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
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Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M
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..... N L S M E N L S M

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name	B2G WSO1.40																														
Date	[2 8 0 5 2 0 2 1]	Project Name	B2G basin water quality sampling																												
Time (24 hrs)	[0 7 : 2 0]	QHSS Analysis No.	[]																												
Project Code	[5 1 1 8 4 1]	Submitted	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C		D	E	F	G	H	I	J	K	L	M	N																	
Run Code	[]	Received																													
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[ | | | | | ] SPL: 139.5 $\mu\text{S/cm}$ C: 100.2 $\mu\text{S/cm}$	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 0 | . | 3] DO%: 83.1	[ | | ]	2080.5
pH	[8 | . | 6] DO% 9.29 mg/L}	[ | | ]	2100.5
Dissolved O_2 mg/l}	[ | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | ] TDS: 903.50 mg/L}	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] SAL: 0.70 ppt}	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] ORP:	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ] 158.4 mV}	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [☒] Comments:
 Today: Rain M Cloud cover E M Wind M
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10.0 % Water Odour: M

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: ☒ L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M ☒ Submerged: N L S M ☒

Floating: ☒ L S M E

Impacts: Human N ☒ S M E Pastoral animals ☒ L S M E Non-pastoral animals ☒ L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 20 m Right bank 20 m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank 20 m Right bank 20 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[]	Sample Number	[]																												
Site Name	B26 WSO1433																														
Date	[2 7 0 5 2 0 2 1]	Project Name	B26 baseline water quality sampling																												
Time (24 hrs)	[1 6 : 1 5]	QHSS Analysis No.	[]																												
Project Code	[5 1 1 8 4 1]	Submitted	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C		D	E	F	G	H	I	J	K	L	M	N																	
Run Code	[]	Received																													
Party	[] [] []																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[ | | | | | ]	SPL: 345.1 $\mu\text{S/cm}$ [ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 6 | . | 4 | ]	C: 288.4 $\mu\text{S/cm}$ [ | | ]	2080.5
pH	[8 | . | 5 | 7 | ]	DO% 70.6 [ | | ]	2100.5
Dissolved O_2 mg/l	[ | . | | ]	DO: 6.92 mg/L [ | | ]	2351.5
Turbidity NTU	[ | | | ]		2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	TDS 224.25 mg/L [ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	SAL: 0.17 ppt [ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]		2114.5
Transparency (secchi) m	[ | | . | | ]	ORP: 127.1 mV [ | | ]	2046.5
Velocity m/s	[ | . | | ]		240.0
Gauge Height m	[ | | | . | ]		100.0
Discharge m^3/s}	[ | | | | . | | ]		140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [☒] Comments: _____
 Today: Rain Nil Cloud cover Nil Wind Moderate
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other: Some slick around edges

Algae: On substrate: N L ☒ M E In water column: N L S M E

Macrophytes: Emergent: N L ☒ M E Submerged: N L S ☒ E

Floating: ☒ L S M E

Impacts: Human ☒ L S M E Pastoral animals ☒ L S M E Non-pastoral animals ☒ L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 15 m Right bank 10 m
* Bare ground None Little Some Moderate Extensive
* Grass None Little Some Moderate Extensive
* Shrubs None Little Some Moderate Extensive
* Trees <10 m high None Little Some Moderate Extensive
* Trees >10 m high None Little Some Moderate Extensive
Presence of exotic riparian species None Little Some Moderate Extensive
Width of continuous tree zone from bank: Left bank 15 m Right bank 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name	B2GWS01.42		
Date	[2 | 8 | 10 | 5 | 2 | 0 | 2 | 1 | ]	Project Name	B2G baseline water quality sampling
Time (24 hrs)	[0 | 8 : 1 | 5]	QHSS Analysis No.	[ | | | | | ]
Project Code	[5 | 1 | 1 | 8 | 4 | 1 | ]	Submitted	[A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[ | | | | ] SPL: 1443 $\mu\text{S}/\text{cm}$	[ | | ]	2010.5
Water Temperature °C	[18 | . | 2] LI: 980 $\mu\text{S}/\text{cm}$	[ | | ]	2080.5
pH	[8 | . | 5] 4	[ | | ]	2100.5
Dissolved O ₂ mg/l	[ | | . | ] DO%: 98.6	[ | | ]	2351.5
Turbidity NTU	[ | | | ] DO: 11.58 mg/L	[ | | ]	2030.5
Air Temperature °C	[ | | . | ] TDS: 936 mg/L	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | | . | ] SAL: 0.73 ppt	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | | . | ] ORP: 133.2 mV	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [☒] Comments:
 Today: Rain Nil Cloud cover Nil Wind ~~Light~~ Light
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other Small amount of foaming.

Algae: On substrate: N L ☒ M E In water column: ☒ L S M E

Macrophytes: Emergent: ☒ L S M E Submerged: ☒ L S M E

Floating: ☒ L S M E

Impacts: Human N ☒ L S M E Pastoral animals ☒ L S M E Non-pastoral animals ☒ L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: Some algae along edge of banks -> brown, green colour

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other Cow dung

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other Minor foaming

Variety of habitat: Shallow Deep Pool Riff Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank 10 m Right bank 10 m

	None	Little	<u>Some</u>	Moderate	Extensive
* Bare ground					
* Grass				<u>Moderate</u>	
* Shrubs			<u>Some</u>		
* Trees <10 m high			<u>Some</u>		
* Trees >10 m high	<u>None</u>				
Presence of exotic riparian species	<u>None</u>				

Width of continuous tree zone from bank: Left bank 10 m Right bank 10 m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu S/cm @ 25^{\circ}C$ [216 91 17]	[]	2010.5
Water Temperature	$^{\circ}C$ [17 0]	[]	2080.5
pH	[17 13]	[]	2100.5
Dissolved O_2	mg/l [18 56]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^{\circ}C$ []	[]	2065.5
Total Alkalinity	$mg/l CaCO_3$ []	[]	2113.5
Phenol Alkalinity	$mg/l CaCO_3$ []	[]	2114.5
Transparency (secchi)	m []	[]	2046.5
Velocity	m/s []	[]	240.0
Gauge Height	m []	[]	100.0
Discharge	m^3/s []	[]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments: _____
Today: Rain Min Cloud cover 0% Wind NW
 Comments: _____

Shading: 15 %		Water Odour: Nil																
Water Surface Condition:		Normal			Slick			Scum			Foaming			Other				
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E					
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E					
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)							

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R %	E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K %	S %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R %	E %
Edge [] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %	Run %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<u>no change</u> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	
Date [23/06/2011]	Project Name _____
Time (24 hrs) [08:50]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	Submitted [ | | | | | ]
Run Code [ | | | | | ]	Received [ | | | | | ]
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[5 | 3 | 6 | . | 5 ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 1 | . | 4 ]	[ | | ]	2080.5
pH	[7 | . | 5 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[8 | . | 7 ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain [Min] Cloud cover [10%] Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: [50] % Water Odour: [Nil]

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N [D] S M E In water column: [N] L S M E

Macrophytes: Emergent: N L S [M] E Submerged: [N] L S M E

Floating: [N] L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] %	in: R [ | | ] % E [ | | ] %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K [ | | ] %	S [ | | ] % Run [ | | ] %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] %	in: R [ | | ] % E [ | | ] %
Edge [ | | ] %		K [ | | ] %	S [ | | ] % Run [ | | ] %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %	

COMMENTS: _____

(Office use only) Entered into Hydsys [/ /] by _____ Checked on [/ /] by _____

Entered into AQEIS [/ /] by _____ Checked on [/ /] by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* Some Moderate Extensive

Water colour: Clear *Green* *Opaque* Tannin Other

Sediment deposits: *None* Sand Silt Other

Algae: On substrate: None *Little* Some Moderate Extensive

In water column: *None* *Little* Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow *Deep* *Pool* *Run* Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow *Low* Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<i>no change</i> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [02611-6] Sample Number [| | | | | | | | | | | | | |]

Site Name _____

Date [27/10/16] Project Name _____

Time (24 hrs) [07:45] QHSS Analysis No. [| | | | |]

Project Code [| | | | |] Submitted [| | | | | | | | | | | | | |]

Run Code [| | | | |] Received [| | | | | | | | | | | | | |]

Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[385 | . | 1] 225.0	[ | | ]	2010.5
Water Temperature °C	[11 | . | 3]	[ | | ]	2080.5
pH	[7 | . | 45]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[8 | . | 16] DO ₂ = 74.3	[ | | ]	2351.5
Turbidity NTU	[ | | | ] TDS = 198.25	[ | | ]	2030.5
Air Temperature °C	[ | . | ] WP = 174.4	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | . | ] SALT = 0.15	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | . | | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | | . | | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: morning (cold)

Today: Rain [Min] Cloud cover [5%] Wind [N1]

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: [0] % Water Odour: [Nil]

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N [X] S M E In water column: [X] L S M E

Macrophytes: Emergent: N L [X] M E Submerged: [X] L S M E

Floating: [X] L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R [ | | ] % E [ | | ] %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K [ | | ] % S [ | | ] % Run [ | | ] %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R [ | | ] % E [ | | ] %
Edge [ | | ] %		K [ | | ] % S [ | | ] % Run [ | | ] %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys [/ /] by [] Checked on [/ /] by []

Entered into AQEIS [/ /] by [] Checked on [/ /] by []

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

WATER QUALITY SAMPLING FIELD SHEET



Site Number [| | | | |] Sample Number [| | | | |]

Site Name B26 1-7

Date 22/6/2021 Project Name _____

Time (24 hrs) 12:30 QHSS Analysis No. [| | | |]

Project Code [| | | |] Submitted [A B C D E F G H I J K L M N]

Run Code [| | | |] Received [| | | |]

Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2 | 8 | 4 | . | 4] <u>212.9</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 1 | . | 8 ]	[ | | ]	2080.5
pH	[7 | . | 5 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[9 | 1 | 3] <u>Do% = 84.6</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <u>TDS = 184.6</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] <u>Salinity = 0.14</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] <u>DRP = 153.7 mv</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: Fr

Today: Rain Min Cloud cover 0% Wind Min

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: Min

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: No change

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name			
Date	23/06/2011	Project Name	
Time (24 hrs)	11:00	QHSS Analysis No.	[ | | | | ]
Project Code	[ | | | | ]	Submitted	A B C D E F G H I J K L M N
Run Code	[ | | | | ]	Received	
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	2198.16	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	10.7	[ | | ]	2080.5
pH	7.11	[ | | ]	2100.5
Dissolved O_2 mg/l	4.04	[ | | ]	2351.5
Turbidity NTU	194.35	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	0.14	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	180.7	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3		[ | | ]	2114.5
Transparency (secchi) m		[ | | ]	2046.5
Velocity m/s		[ | | ]	240.0
Gauge Height m		[ | | ]	100.0
Discharge m^3/s}		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain 11.9 Cloud cover 80% Wind 11
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 50% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *No change* Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) .. 20 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name _____
 Date 13/06/2021 Project Name _____
 Time (24 hrs) [11:20] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | | ]	[ | | ]	2080.5
pH	[ | | | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R _____ % E _____ %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K _____ % S _____ % Run _____ %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R _____ % E _____ %
 Edge [| |] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____
 Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

- | | |
|--|---------------------------------------|
| 0. Urban/semi-urban, industrial | 3. Light grazing, vegetation clearing |
| 1. Irrigated cropping, intensive forestry or heavy grazing | 4. Natural |
| 2. Non-irrigated cropping, moderate grazing | |

Local catchment erosion:	None	Little	Some	Moderate	Extensive
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Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column:	None	Little	Some	Moderate	Extensive
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Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other.....

Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
(circle all types)	Undercut bank		LWD	Macrophytes	Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow (dry/isolated)	Low (<watermark)	Moderate (=watermark)	High (>watermark)	Flood
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RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					

	None	Little	Some	Moderate	Extensive
* Grass					

* Shrubs	None	Little	Some	Moderate	Extensive
----------	------	--------	------	----------	-----------

* Trees <10 m high	None	Little	Some	Moderate	Extensive
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* Trees >10 m high	None	Little	Some	Moderate	Extensive
--------------------	------	--------	------	----------	-----------

	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1–10% Some = 10–50% Moderate = 50–75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
--------	---	---	---	---	---	------------------------------------	---	---	---	---	---

	N	L	S	M	E		N	L	S	M	E
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					

Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
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Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)		N	L	S	M	E
---	---	---	---	---	---	--------------------------	--	---	---	---	---	---

Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
----------	---	---	---	---	---	-------------------------------	---	---	---	---	---

Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
---------------------------------------	---	---	---	---	---	---------------------------	---	---	---	---	---

Water hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
--------------------------------------	---	---	---	---	---	--	---	---	---	---	---

Pondweeds (<i>Najas</i>)	N	E	S	M	F						
Ribbonweed (<i>Vallisneria</i>)	N	I	S	M	F		N	I	S	M	F

[illegible]

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
--------------------------------------	---	---	---	---	---	---	---	---	---	---	---

Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
----------	---	---	---	---	---	--------	---	---	---	---	---

Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Fogeria</i>	N	L	S	M	E
--------------------------------	---	---	---	---	---	----------------	---	---	---	---	---

	N	L	S	M	E		N	L	S	M	E
--	---	---	---	---	---	--	---	---	---	---	---

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [2 8 9 . 5] 166.4	[]	2010.5
Water Temperature	$^\circ\text{C}$ [1 4 . 3]	[]	2080.5
pH	[7 . 34]	[]	2100.5
Dissolved O_2	mg/l [7 . 57] DO%: 74.3	[]	2351.5
Turbidity	NTU [] TDS: 135.95	[]	2030.5
Air Temperature	$^\circ\text{C}$ [.] ORP: 186.2	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [.] SALT: 0.10	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [.]	[]	2114.5
Transparency (secchi)	m [.]	[]	2046.5
Velocity	m/s [.]	[]	240.0
Gauge Height	m [.]	[]	100.0
Discharge	m^3/s [.]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments: *0'cast*
Today: Rain *min* Cloud cover *90%* Wind *buzz*
 Comments:

Shading: 90 %		Water Odour: Nil										
Water Surface Condition: Normal		Slick		Scum			Foaming			Other		
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E
	Floating:	N	L	S	M	E						
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E
		Non-pastoral animals			N	L	S	M	E			
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)		

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R	 %	E	 %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K	 %	S	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R	 %	E	 %
Edge	[] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %		Run	 %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *No change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) ... 10 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m *No change* Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<i>No change</i> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [23/06/2021]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [12:10]	
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted [A B C D E F G H I J K L M N]
Party [ | | ] [ | | ] [ | | ]	Received [ | | ] [ | | ] [ | | ]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY			
Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	2011.7	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	10.10	[ | | ]	2080.5
pH	7.26	[ | | ]	2100.5
Dissolved O_2 mg/l	6.23	[ | | ]	2351.5
Turbidity NTU	131.30	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	0-10	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	176.6	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3		[ | | ]	2114.5
Transparency (secchi) m		[ | | ]	2046.5
Velocity m/s		[ | | ]	240.0
Gauge Height m		[ | | ]	100.0
Discharge m^3/s}		[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: ... 0.1 Last

Today: Rain ... Min Cloud cover ... 100% Wind ... Breeze

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 40% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: No Change

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify Aquatic

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 5 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank No Change m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						<u>No Change</u>					
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	<u>Water Lettuce</u> (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ []	[]	2010.5
Water Temperature	$^\circ\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^\circ\text{C}$ [•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading: % Water Odour:																		
Water Surface Condition:		Normal		Slick			Scum			Foaming			Other					
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | | | |] Sample Number [| | | | | | | | | | | | |]

Site Name B-6 1-23

Date [23 / 06 / | | |] Project Name _____

Time (24 hrs) [13 : 45] QHSS Analysis No. [| | | | |]

Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]

Run Code [| | | | |] Received [| | | | |]

Party [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	SPC Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[3 | 4 | 4 | . | 3] <u>260.5</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 2 | . | 3 ]	[ | | ]	2080.5
pH	[8 | . | 5 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 5 | . | 7 | 3] <u>D.O. = 149.1</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <u>TDS = 223.10</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] <u>SALT = 0.17</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] <u>ORP = 160.1</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: overcast

Today: Rain min Cloud cover 100% Wind min

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: mild (slightly) (sun)

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys / / by _____ Checked on / / by _____

Entered into AQEIS / / by _____ Checked on / / by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify Slick/Scum

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

B24 1-24

Queensland
Government
Natural Resources
and Mines

WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | | | |] Sample Number [| | | | | | | | | | | | |]
 Site Name B24 1-24
 Date [21/10/16 12:00] Project Name _____
 Time (24 hrs) [13:55] QHSS Analysis No. [| | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | | | | | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	SPL Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[212 | 91 | 3] 187.9	[ | | ]	2010.5
Water Temperature °C	[15 | 1 | 6 ]	[ | | ]	2080.5
pH	[7 | 1 | 2 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[6 | 1 | 4] DO % = 64.5	[ | | ]	2351.5
Turbidity NTU	[ | | | ] TDS = 149.8	[ | | ]	2030.5
Air Temperature °C	[ | | 1] SAT = 0.11	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | 1] ORP = 172.6	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | 1 ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 1 ]	[ | | ]	2046.5
Velocity m/s	[ | 1 | ]	[ | | ]	240.0
Gauge Height m	[ | | 1 | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | 1 | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: 0.1 last
 Today: Rain Run Cloud cover 100% Wind Strong breeze
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: Ni
 Water Surface Condition: Normal 0 Slick Scum Foaming Other _____
 Algae: On substrate: N 0 S M E In water column: N 0 S M E
 Macrophytes: Emergent: N 0 S M E Submerged: N 0 L S M E
 Floating: N L S M E red acolla (wind - concentration)
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No Change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *No Change*

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E No Change Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____																													
Date [23 / 06 / 2011]	Project Name _____																												
Time (24 hrs) [14:45]	QHSS Analysis No. []																												
Project Code []	Submitted Received																												
Run Code []																													
Party [] [] []																													
	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l} [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s} [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | ]		[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from ☐ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ by _____ Checked on _____ / _____ by _____

Entered into AQEIS _____ / _____ by _____ Checked on _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural 2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae:	On substrate:	None	Little	Some	Moderate	Extensive					
	In water column:	None	Little	Some	Moderate	Extensive					
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name _____
 Date [27/06/2011] Project Name _____
 Time (24 hrs) [15:10] QHSS Analysis No. [| | | |]
 Project Code [| | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | |] Received [| | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[312.8 ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[14.4 ]	[ | | ]	2080.5
pH	[8.5 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[10.4 ]	[ | | ]	2351.5
Turbidity NTU	[255.45 ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[19 ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[155.2 ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from ☐ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain [Min] Cloud cover [0] Wind [10]
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: [5] % Water Odour: [Nil]
 Water Surface Condition: Normal [X] Slick [] Scum [] Foaming [] Other []
 Algae: On substrate: N L S M E In water column: [N] [L] S M E
 Macrophytes: Emergent: N L S M E Submerged: [N] [L] S M E
 Floating: [N] [L] S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R [| |] % E [| |] %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K [| |] % S [| |] % Run [| |] %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R [| |] % E [| |] %
 Edge [| |] % K [| |] % S [| |] % Run [| |] %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys [/ /] by [] Checked on [/ /] by []
 Entered into AQEIS [/ /] by [] Checked on [/ /] by []

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 2.5 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						no change					
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name _____
 Date [23 / 06 / 2012] Project Name _____
 Time (24 hrs) [15 : 35] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[385 - 8] 312.1	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[15.0 ]	[ | | ]	2080.5
pH	[8.17 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[11.16] DO% = 112.0	[ | | ]	2351.5
Turbidity NTU	[ | | ] TDS = 257.55	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] Salt = 0.19	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] ORP = 145.7	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____
 Today: Rain [min] Cloud cover [80%] Wind [Constant]
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 25% Water Odour: M1
 Water Surface Condition: Normal Slick - Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

B2G 1.33



**Queensland
Government**
Natural Resources
and Mines

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 10 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

B26 1.39



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | | | ]	Sample Number [ | | | | | | | | | | | | | | | ]
Site Name _____	
Date [2 | 9 | 0 | 6 | / | 2 | 6 | 2 | 1 | ]	Project Name _____
Time (24 hrs) [0 7 : 1 6]	QHSS Analysis No. [ | | | | | | ]
Project Code [ | | | | | | | ]	
Run Code [ | | | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2 1 5 1 1] 7648	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 2 0 8]	[]	2080.5
pH	[7 9]	[]	2100.5
Dissolved O_2 mg/l	[9 0 3] DOI = 189.4	[]	2351.5
Turbidity NTU	[] TDS = 1397.50	[]	2030.5
Air Temperature $^\circ\text{C}$	[0] SALT = 1.11	[]	2065.5
Total Alkalinity mg/l CaCO_3	[0] ORP = 195.3	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[0]	[]	2114.5
Transparency (secchi) m	[0]	[]	2046.5
Velocity m/s	[0]	[]	240.0
Gauge Height m	[0]	[]	100.0
Discharge m^3/s	[0]	[]	140.0

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [X] No [] Comments: *Clear*
Today: Rain *min* Cloud cover *70%* Wind *breeze*
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: -

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R		%	E		%
------------	---	--	--	---	---	-----	---	--	--	---	---	-------------	---	--	--	---	---------	-------	---	---	-------	---

Pool (rocky-K)	[]	[]	[]	[]	%	Pool (sandy-S)	[]	[]	[]	[]	%	K		%	S		%	Run		%
----------------	-----	-----	-----	-----	---	----------------	-----	-----	-----	-----	---	---	-------	---	---	-------	---	-----	-------	---

Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae	[ | | ] % in: R % E %
-----	-----------------	----------------------------------	-------	--

Edge	[ | | ] %	K..... %	S..... %	Run..... %
------	-----------------	----------	----------	------------

Edge is % of habitat available to sample from L and R banks

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify *Anaerobic*

Water surface: Normal Shick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | | |]
 Site Name B2G 1.40
 Date [24 / 06 / 2012] Project Name _____
 Time (24 hrs) [07:45] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | | | | | | | |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[110 / 41] <u>1069</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[12 / 6 ]	[ | | ]	2080.5
pH	[8 / 54 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[9 / 34] <u>DO = 88.2</u>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <u>TDS = 910</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] <u>Salt = 0.71</u>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] <u>ORP = 145.0</u>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: 0.1 cast
 Today: Rain 10.1 Cloud cover 100% Wind 10.1
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 56 % Water Odour: _____
 Water Surface Condition: Normal 2 Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: no change

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: No change

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [] [] [] [] [] [] [] [] Sample Number [] [] [] [] [] [] [] [] [] [] [] [] [] []
 Site Name _____
 Date [4/10/17] [17/10/17] [17/10/17] Project Name _____
 Time (24 hrs) [21:45] [1450] QHSS Analysis No. [] [] [] [] [] [] [] []
 Project Code [] [] [] [] [] [] [] [] Submitted [] [] [] [] [] [] [] [] [] [] [] [] [] []
 Run Code [] [] [] [] [] [] [] [] Received [] [] [] [] [] [] [] [] [] [] [] [] [] []
 Party []

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[171.5] [170] <i>SPC 178.8</i>	[] [] []	2010.5
Water Temperature $^\circ\text{C}$	[12.2] [12]	[] [] []	2080.5
pH	[7.14] [7.14]	[] [] []	2100.5
Dissolved O_2 mg/l	[91.16] <i>DO% = 85.2</i>	[] [] []	2351.5
Turbidity NTU	[] [] [] <i>TDS = 116.35</i>	[] [] []	2030.5
Air Temperature $^\circ\text{C}$	[] [] [] <i>ORP = 175.2</i>	[] [] []	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[] [] [] <i>Sal = 0.09</i>	[] [] []	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[] [] []	[] [] []	2114.5
Transparency (secchi) m	[] [] []	[] [] []	2046.5
Velocity m/s	[] [] []	[] [] []	240.0
Gauge Height m	[] [] []	[] [] []	100.0
Discharge m^3/s	[] [] []	[] [] []	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain *+15mm* Cloud cover *60%* Wind *Wedge*
 Comments: *river up (mud - bank)*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *10* % Water Odour: *psl*
 Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other _____
 Algae: On substrate: N L ☒ M E In water column: ☒ L S M E
 Macrophytes: Emergent: N ☒ S M E Submerged: ☒ L S M E
 Floating: ☒ L S M E
 Impacts: Human N L S M F Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH

Riffle (R) [] [] [] % Run [] [] [] % Macrophytes [] [] [] % in: R _____ % E _____ %
 Pool (rocky-K) [] [] [] % Pool (sandy-S) [] [] [] % K _____ % S _____ % Run _____ %
 Dry [] [] [] % Riffle + Run + Pool + Dry = 100% Algae [] [] [] % in: R _____ % E _____ %
 Edge [] [] [] % K _____ % S _____ % Run _____ %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [] [] [] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand *Silt* Other *High flow on bank*

Algae: On substrate: None Little *Some* Moderate Extensive

In water column: *None* Little *Some* Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: No *Yes* Specify *Organics (superfines)*

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep *Pool* Run Riffle

(circle all types) Undercut bank *WVD* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) % *submerged*

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *no change*

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native *no change*

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Type Right bank: Score Type
 Adjacent landuse: Left bank: Score Type
 0. Urban/semi-urban, industrial
 1. Irrigated cropping, intensive forestry or heavy grazing
 2. Non-irrigated cropping, moderate grazing
 3. Light grazing, vegetation clearing
 4. Natural

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Little Some Moderate Extensive
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: No Yes Specify
 Water odour: No Yes Specify
 Substrate odour: Normal Slick Scum Foaming Other
 Water surface: Shallow Deep Pool Run Riffle
 Variety of habitat: Undercut bank LWD Macrophytes Other
 (circle all types)

Bars: (bed surface protruding from normal water level and forming a bar) ... %
 Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
 No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species
 Width of continuous tree zone from bank: Left bank m Right bank m
 None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

	N	L	S	M	E		N	L	S	M	E
Native						Water Ribbon (Triglochin)	N	L	S	M	E
Azolla	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Steneworts (Chara or Nitella)	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E		N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E		N	L	S	M	E
	N	L	S	M	E		N	L	S	M	E
Exotic						Alligator Weed (Alternanthera)	N	L	S	M	E
Water Hyacinth (Eichhornia)	N	L	S	M	E	Elodea	N	L	S	M	E
Salvinia	N	L	S	M	E	Egeria	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E		N	L	S	M	E

B2G 1-3



**Queensland
Government**
Natural Resources
and Mines

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[][][][][][][]	Sample Number	[][][][][][][][][][][][][][][][]																												
Site Name																															
Date	[24 / 07 / 2021]	Project Name																													
Time (24 hrs)	[0845]	QHSS Analysis No.	[][][][][][][]																												
Project Code	[][][][][][][]	Submitted	<table border="1"> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[][][][][][][]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[][][] [][][] [][][]																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1 | 6 | 0 | . | 1 6] 213.4	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 2 | . | 1 0 ]	[ | | ]	2080.5
pH	[ | 7 | . | 3 1 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 9 | . | 4 3] DOI = 87.5	[ | | ]	2351.5
Turbidity NTU	[ | | | | ] TDS = 130.45	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | . | ] ORP = 161.9	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | | . | ] SAR = 0.10	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | | ]	[ | | ]	140.0
Discharge Method: measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes ☒ No ☐ Comments:

Today: Rain 15 mm Cloud cover 100% fog Wind

Comments: Cold

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading:		% Water Odour:		<i>no change</i>														
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | | ] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) % Submerged

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark) receding

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	
Date [2 | 2 | / 0 | 7 | / 2 | 0 | / 2 | / 1 | ]	Project Name _____
Time (24 hrs) [0 | 8 | : 0 | 0 | ]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	Submitted [A B C D E F G H I J K L M N]
Run Code [ | | | | | ]	Received [ | | | | | ]
Party [ | | | ] [ | | | ] [ | | | ]	

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[6 | 7 | 9 | - | 1 | 6] <i>SPL 240.0</i>	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 1 | . | 7 | ]	[ | | | ]	2080.5
pH	[7 | . | 1 | 8 | ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[8 | . | 3 | 5 | ] <i>DO = 76.7</i>	[ | | | ]	2351.5
Turbidity NTU	[ | | | | ] <i>TSS = 156.65</i>	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | 0 | ] <i>ORP = 157.7</i>	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] <i>SAL = 0.12</i>	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [☐] Comments: _____

Today: Rain *~15mm* Cloud cover *090 (fog)* Wind *Nil*

Comments: *fine (good!)*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *35* % Water Odour: *Nil*

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N ☒ S M E In water column: ☒ N L S M E

Macrophytes: Emergent: N L ☒ S M E Submerged: ☒ N L S M E

Floating: ☒ N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R _____ % E _____ %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K _____ % S _____ % Run _____ %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R _____ % E _____ %
Edge [ | | ] %		K _____ % S _____ % Run _____ %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear *Green* *Opaque* Tannin Other
Sediment deposits: None Sand Silt Other *High flow, soft fines*
Algae: On substrate: None Little Some Moderate Extensive
In water column: *None* Little Some Moderate Extensive
Water odour: *No* Yes Specify
Substrate odour: *No* Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow *Deep* *Pool* *Run* Riffle
(circle all types) Undercut bank TWD Macrophytes Other
Bars: (bed surface protruding from normal water level and forming a bar) *20* % *slow*
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark) *according*

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *No change*

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous free zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



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REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: no change

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other high flow fines

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark) receding

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						<u>no change</u>					
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

[illegible]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ []	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ [•]	[]	2065.5
Total Alkalinity	$\text{mg}/\text{l CaCO}_3$ [•]	[]	2113.5
Phenol Alkalinity	$\text{mg}/\text{l CaCO}_3$ [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☒ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumeecs

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading:		% Water Odour:																		
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other										
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E							
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E							
	Floating:	N	L	S	M	E														
Impacts:	Human	N	L	S	M	E	Pastoral animals		N	L	S	M	E	Non-pastoral animals		N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)												

Riffle (R)	[] %	Run	[] %	Macrophytes [] % in:	R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae [] % in:	R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt [] %		Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$ []	[]	2010.5
Water Temperature	$^\circ\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^\circ\text{C}$ [•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated; ☐ no flow ☐ trickle ☐ >0.01 cume/cs

WEATHER: *Rain in past week:* Yes [] No [] Comments:
Today: Rain Cloud cover Wind
 Comments:

Shading:		% Water Odour:																				
Water Surface Condition:		Normal			Slick			Scum			Foaming			Other								
Algae:	On substrate:	N	L	S	M	E	In water column:			N	L	S	M	E								
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:			N	L	S	M	E								
	Floating:	N	L	S	M	E																
Impacts:	Human	N	L	S	M	E	Pastoral animals			N	L	S	M	E	Non-pastoral animals			N	L	S	M	E
N = none		L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)											

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

Upstream landuse:					
Adjacent landuse: Left bank: Score		Type		Right bank: Score	
				Type	
0. Urban/semi-urban, industrial		3. Light grazing, vegetation clearing			
1. Irrigated cropping, intensive forestry or heavy grazing		4. Natural			
2. Non-irrigated cropping, moderate grazing					
Local catchment erosion:	None	Little	Some	Moderate	Extensive
Water colour:	Clear	Green	Opaque	Tannin	Other
Sediment deposits:	None	Sand	Silt	Other	
Algae: On substrate:	None	Little	Some	Moderate	Extensive
In water column:	None	Little	Some	Moderate	Extensive
Water odour:	No	Yes	Specify		
Substrate odour:	No	Yes	Specify		
Water surface:	Normal	Slick	Scum	Foaming	Other
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
(circle all types)	Undercut bank		LWD	Macrophytes	Other
Bars: (bed surface protruding from normal water level and forming a bar) %					
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).					
	No flow	Low	Moderate	High	Flood
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)	

Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	

Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | | | | |]
 Site Name _____
 Date [22/10/2011] Project Name _____
 Time (24 hrs) [10:30] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted _____
 Run Code [| | | | |] Received _____
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[215 | 2. | 1] <i>SPC 212.3</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[16 | 1. | 3 ]	[ | | ]	2080.5
pH	[7 | 1. | 52 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[7. | 48] <i>DO = 66.8</i>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <i>TDS = 138.95</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | ] <i>ORP = 167.0</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | ] <i>SAL = 0.10</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | ]	[ | | ]	2046.5
Velocity m/s	[ | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: _____
 Today: Rain *+ 15mm* Cloud cover *0%* Wind *W / minor breeze*
 Comments: *COOL*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *25* % Water Odour: *M*
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N *L* S M E In water column: N *L* S M E
 Macrophytes: Emergent: N *L* S M E Submerged: N *L* S M E
 Floating: N *L* S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [22/07/2011]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [11:10]	Submitted [ | | | | | ]
Project Code [ | | | | | ]	Received [ | | | | | ]
Run Code [ | | | | | ]	
Party [ | | | | | ]	

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[136.4] <i>SPL 188.7</i>	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[16.6 ]	[ | | | ]	2080.5
pH	[7.23 ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[6.58] <i>DO = 60.0</i>	[ | | | ]	2351.5
Turbidity NTU	[ | | | ] <i>ORP = 168.8</i>	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | ] <i>TDS = 122.85</i>	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | ] <i>SAL = 0.09</i>	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | | | ]	[ | | | ]	2046.5
Velocity m/s	[ | | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | ]	[ | | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain *+15 mm* Cloud cover *0%* Wind *Min breeze*
 Comments: *Fine*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *35%* Water Odour: *N1*

Water Surface Condition: Normal *Normal* Slick *Normal* Scum *Normal* Foaming *Normal* Other _____

Algae: On substrate: N *Normal* L *Normal* S *Normal* M *Normal* E *Normal* In water column: N *Normal* L *Normal* S *Normal* M *Normal* E *Normal*

Macrophytes: Emergent: N *Normal* L *Normal* S *Normal* M *Normal* E *Normal* Submerged: N *Normal* L *Normal* S *Normal* M *Normal* E *Normal*

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Rocky Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	<u>Water Ribbon (Triglochin)</u>	N	L	S	M	E
Duckweed	N	L	S	M	E	<u>Water Lettuce (Pistia stratiotes)</u>	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	<u>Water Primrose (Ludwigia)</u>	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	<u>Sedge (Cyperus)</u>	N	L	S	M	E
Hydrilla	N	L	S	M	E	<u>Common Rush (Juncus)</u>	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	<u>Cumbungi (Typha)</u>	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	<u>Slender Knotweed (Persicaria)</u>	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (Eichhornia)	N	L	S	M	E	<u>Alligator Weed (Alternanthera)</u>	N	L	S	M	E
Salvinia	N	L	S	M	E	<u>Elodea</u>	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	<u>Egeria</u>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [] [] [] [] [] [] [] []	Sample Number [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []																												
Site Name _____																													
Date [22/10/2012]	Project Name _____																												
Time (24 hrs) [11:35]	QHSS Analysis No. [] [] [] [] [] [] [] []																												
Project Code [] [] [] [] [] [] [] []	Submitted																												
Run Code [] [] [] [] [] [] [] []	Received																												
Party [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[] [] [] [] [] []	[] [] []	2010.5
Water Temperature $^\circ\text{C}$	[] [] [] [] [] []	[] [] []	2080.5
pH	[] [] [] [] [] []	[] [] []	2100.5
Dissolved O_2 mg/l	[] [] [] [] [] []	[] [] []	2351.5
Turbidity NTU	[] [] [] [] [] []	[] [] []	2030.5
Air Temperature $^\circ\text{C}$	[] [] [] [] [] []	[] [] []	2065.5
Total Alkalinity mg/l CaCO_3	[] [] [] [] [] []	[] [] []	2113.5
Phenol Alkalinity mg/l CaCO_3	[] [] [] [] [] []	[] [] []	2114.5
Transparency (secchi) m	[] [] [] [] [] []	[] [] []	2046.5
Velocity m/s	[] [] [] [] [] []	[] [] []	240.0
Gauge Height m	[] [] [] [] [] []	[] [] []	100.0
Discharge m^3/s	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []	[] [] []	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] [] [] %	Run [] [] [] %	Macrophytes [] [] [] % in: R _____ % E _____ %
Pool (rocky-K) [] [] [] %	Pool (sandy-S) [] [] [] %	K _____ % S _____ % Run _____ %
Dry [] [] [] %	Riffle + Run + Pool + Dry = 100%	Algae [] [] [] % in: R _____ % E _____ %
Edge [] [] [] %		K _____ % S _____ % Run _____ %
Edge % of habitat available to sample from L and R banks		Blanketing silt [] [] [] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____
 Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm}@25^\circ\text{C}$ [118 9 . 9]	[]	2010.5
Water Temperature	$^\circ\text{C}$ [7 2 . 1]	[]	2080.5
pH	[7 . 0 1]	[]	2100.5
Dissolved O_2	mg/l [7 . 2]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^\circ\text{C}$ [.]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [.]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [.]	[]	2114.5
Transparency (secchi)	m [.]	[]	2046.5
Velocity	m/s [.]	[]	240.0
Gauge Height	m [.]	[]	100.0
Discharge	m^3/s [.]	[]	140.0

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain 15 mm Cloud cover 0% Wind *W*

Comments:

Shading: 10 % Water Odour: NIL

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M I

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Riffle (R)	[] [] [] %	Run	[] [] [] %	Macrophytes	[] [] [] % in: R	 %	E	 %
Pool (rocky-K)	[] [] [] %	Pool (sandy-S)	[] [] [] %		K	 %	S	 %
Dry	[] [] [] %	Riffle + Run + Pool + Dry = 100%		Algae	[] [] [] % in: R	 %	E	 %
Edge	[] [] [] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] [] [] %			

(Office use only) Entered into HydSys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand *Silt* Other *high flow silt*

Algae: On substrate: None *Little* Some Moderate Extensive
In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal *Slick* Scum Foaming Other *bank holding firm*

Variety of habitat: *Shallow* Deep *Pool* Run Riffle
(circle all types) Undercut bank *LWD* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (10 maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *No change*

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<i>No change</i> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Type No change Right bank: Score Type
 Adjacent landuse: Left bank: Score Type
 0. Urban/semi-urban, industrial
 1. Irrigated cropping, intensive forestry or heavy grazing
 2. Non-irrigated cropping, moderate grazing
 3. Light grazing, vegetation clearing
 4. Natural

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other
 Bars: (bed surface protruding from normal water level and forming a bar) %
 Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types),
 No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species Left bank m Right bank m
 Width of continuous tree zone from bank: Left bank m Right bank m
 None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

	N	L	S	M	E		N	L	S	M	E
Native						<u>No change</u> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Azolla	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	.....	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
Exotic						Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Elodea	N	L	S	M	E
Salvinia	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	.....	N	L	S	M	E

Comments:
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____																													
Date [21/07/2011]	Project Name _____																												
Time (24 hrs) [14:10]	QHSS Analysis No. []																												
Project Code []	Submitted																												
Run Code []	Received																												
Party [] [] []	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[2120.7] <i>SPL 295.5</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[17.8 ]	[ | | ]	2080.5
pH	[7.38 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[9.18] <i>DO = 9.2</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>OPT = 203.1</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] <i>SAL = 0.14</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] <i>TDS = 192.40</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: *Fine*
 Today: Rain *15 mm* Cloud cover *0%* Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *20* % Water Odour: *N.I.*
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Rifle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Rifle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

 (Office use only) Entered into Hydsys */ /* by _____ Checked on */ /* by _____
 Entered into AQEIS */ /* by _____ Checked on */ /* by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other *Super fine high flow*

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 2.0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____									
Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____									
WATER QUALITY									
Parameter		Value		Quality		Variable			
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$	[]	[]	[]	[]	[]	[]	[]	[]
Water Temperature	$^{\circ}\text{C}$	[]	[]	[]	[]	[]	[]	[]	[]
pH		[]	[]	[]	[]	[]	[]	[]	[]
Dissolved O_2	mg/l	[]	[]	[]	[]	[]	[]	[]	[]
Turbidity	NTU	[]	[]	[]	[]	[]	[]	[]	[]
Air Temperature	$^{\circ}\text{C}$	[]	[]	[]	[]	[]	[]	[]	[]
Total Alkalinity	$\text{mg}/\text{l CaCO}_3$	[]	[]	[]	[]	[]	[]	[]	[]
Phenol Alkalinity	$\text{mg}/\text{l CaCO}_3$	[]	[]	[]	[]	[]	[]	[]	[]
Transparency (secchi)	m	[]	[]	[]	[]	[]	[]	[]	[]
Velocity	m/s	[]	[]	[]	[]	[]	[]	[]	[]
Gauge Height	m	[]	[]	[]	[]	[]	[]	[]	[]
Discharge	m^3/s	[]	[]	[]	[]	[]	[]	[]	[]
Discharge Method: measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs									

WEATHER: *Rain in past week:* Yes [] No [] Comments:
Today: Rain Cloud cover Wind
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)																		
Shading:		%		Water Odour:														
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH:																														
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R		%	E		%								
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K		%	S		%	Run		%					
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%											Algae	[	|	|	]	% in: R		%	E		%			
Edge	[	|	|	]	%													K		%	S		%	Run		%				
Edge is % of habitat available to sample from L and R banks												Blanketing silt										[	|	|	]	%				

COMMENTS: _____

(Office use only) Entered into Hydsys / / by _____ Checked on / / by _____
Entered into AQEIS / / by _____ Checked on / / by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B24 1-30</u>	
Date [22/10/2012]	Project Name _____
Time (24 hrs) [15:10]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[2118.19] <u>SPC 294.2</u>	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[11.16 ]	[ | | | ]	2080.5
pH	[7.66 ]	[ | | | ]	2100.5
Dissolved O_2 mg/l	[10.31] <u>DO% = 95.2</u>	[ | | | ]	2351.5
Turbidity NTU	[ | | | ] <u>TDS = 191.10</u>	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | ] <u>SPC = 0.14</u>	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | ] <u>ORP = 7.66</u>	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | ] <u>157.3</u>	[ | | | ]	2114.5
Transparency (secchi) m	[ | | | ]	[ | | | ]	2046.5
Velocity m/s	[ | | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | ]	[ | | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain 15mm Cloud cover 15% Wind W breeze
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 5 % Water Odour: N/A

Water Surface Condition: Normal Slick Scum Foaming Other air @ full release

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: no change

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to surface from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by _____ Checked on / / by _____
 Entered into AQEIS / / by _____ Checked on / / by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*
 Adjacent landuse: Left bank: Score Type Right bank: Score Type
 0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive
 Water colour: Clear Green *Opaque* Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow *Deep* Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other
 Bars: (bed surface protruding from normal water level and forming a bar) % *Submerged*
 Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
 No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark) *release*

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank *no change* m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%	Little = 1-10%	Some = 10-50%	Moderate = 50-75%	Extensive >75%	* Can add to >100%
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MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Najas</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[2 2 5 - 1 0] 300.3	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 1 . 1 9]	[]	2080.5
pH	[7 . 5 9]	[]	2100.5
Dissolved O_2 mg/l	[9 0 . 7 3] $\text{DO} = 90.2$	[]	2351.5
Turbidity NTU	[] $\text{TDS} = 195.65$	[]	2030.5
Air Temperature $^\circ\text{C}$	[.] $\text{ORP} = 141.5$	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.] $\text{SAL} = 0.14$	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0

WEATHER: *Rain in past week:* Yes [X] No [] Comments:
Today: Rain ... 1.5 mm Cloud cover ... 100% Wind
 Comments: ... 0'cast

Shading: 10% Water Odour: Nil

Water Surface Condition:		Normal	Slick	Scum	Foaming	Other		
Algae:	On substrate:	N	L S M E		In water column: N L S M E			
Macrophytes:	Emergent:	N	L S M E		Submerged: N L S M E			
	Floating:	N	L S M E					
Impacts:	Human	N	L S M E	Pastoral animals	N L S M E	Non-pastoral animals	N	L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Riffle (R)	[] [] [] %	Run	[] [] [] %	Macrophytes	[] [] [] %	in: R %	E %
Pool (rocky-K)	[] [] [] %	Pool (sandy-S)	[] [] [] %		K %	S %	Run %
Dry	[] [] [] %	Riffle + Run + Pool + Dry = 100%		Algae	[] [] [] %	in: R %	E %
Edge	[] [] [] %				K %	S %	Run %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] [] [] %		

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REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 30 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (Fraglochin) N L S M E

Duckweed N L S M E Water Lettuce (Pistia stratiotes) N L S M E

Hornwort (Ceratophyllum) N L S M E Water Primrose (Ludwigia) N L S M E

Stoneworts (Chara or Nitella) N L S M E Sedge (Cyperus) N L S M E

Hydrilla N L S M E Common Rush (Juncus) N L S M E

Water Milfoil (Myriophyllum) N L S M E Cumbungi (Typha) N L S M E

Pondweeds (Potamogeton) N L S M E Slender Knotweed (Persicaria) N L S M E

Ribbonweed (Vallisneria) N L S M E

N L S M E

Exotic

Water Hyacinth (Eichhornia) N L S M E Alligator Weed (Alternanthera) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (Urochloa) N L S M E Egeria N L S M E

N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2 1 1 0 9] 298.3	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 0 0 7]	[]	2080.5
pH	[7 7]	[]	2100.5
Dissolved O_2 mg/l	[9 7 4] DO% = 88.3	[]	2351.5
Turbidity NTU	[] TDS = 193.70	[]	2030.5
Air Temperature $^\circ\text{C}$	[0] DRP = 142.2	[]	2065.5
Total Alkalinity mg/l CaCO_3	[0] SAL = 0.14	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[0]	[]	2114.5
Transparency (secchi) m	[0]	[]	2046.5
Velocity m/s	[0]	[]	240.0
Gauge Height m	[0]	[]	100.0
Discharge m^3/s	[0]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [X] No [] Comments:

Today: Rain *+15 mm* Cloud cover *100%* Wind *NW*
Comments: *at last*

Shading:	15 %	Water Odour:	nil
Water Surface Condition:	Normal	Slack	minor slick (non hydrocarbon)
Algae:	On substrate:	N	L S M E
Macrophytes:	Emergent:	N	L S M E
	Floating:	N	L S M E
Impacts:	Human	N L S M E	Pastoral animals N L S M E
			Non-pastoral animals N L S M E
	N = none	L = 1-10% (little)	S = 10-50% (some)
			M = 50-75% (moderate)
			E = >75% (extensive)

Riffle (R)	[] [] [] %	Run	[] [] [] %	Macrophytes	[] [] [] % in: R	 %	E	 %
Pool (rocky-K)	[] [] [] %	Pool (sandy-S)	[] [] [] %		K	 %	S	 %
Dry	[] [] [] %	Riffle + Run + Pool + Dry = 100%		Algae	[] [] [] % in: R	 %	E	 %
Edge	[] [] [] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] [] [] %		Run	 %

COMMENTS:

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other high flow

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Shallow Minor Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E no change Water Ribbon (Triglochin) N L S M E

Duckweed N L S M E Water Lettuce (Pistia stratiotes) N L S M E

Hornwort (Ceratophyllum) N L S M E Water Primrose (Ludwigia) N L S M E

Stoneworts (Chara or Nitella) N L S M E Sedge (Cyperus) N L S M E

Hydrilla N L S M E Common Rush (Juncus) N L S M E

Water Milfoil (Myriophyllum) N L S M E Cumbungi (Typha) N L S M E

Pondweeds (Potamogeton) N L S M E Slender Knotweed (Persicaria) N L S M E

Ribbonweed (Vallisneria) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (Eichhornia) N L S M E Alligator Weed (Alternanthera) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (Urochloa) N L S M E Egeria N L S M E

..... N L S M E N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	Project Name _____
Date [23/07/12]	Time (24 hrs) [07:15]
Project Code [ | | | | | ]	QHSS Analysis No. [ | | | | | ]
Run Code [ | | | | | ]	Submitted [ | | | | | ]
Party [ | | | | | ]	Received [ | | | | | ]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[112 | 8 | 1 ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[14 | 0 | 0 ]	[ | | ]	2080.5
pH	[7 | 90 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[8 | 10 ]	[ | | ]	2351.5
Turbidity NTU	[ | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | 0 | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (Secchi) m	[ | 0 | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain +15mm Cloud cover 100% Wind 11
 Comments: 0.1 last

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10% Water Odour: M1

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (intensive)

PERCENT OF HABITAT TYPES IN 100 m REACH

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R [ | | ] % E [ | | ] %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K [ | | ] % S [ | | ] % Run [ | | ] %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R [ | | ] % E [ | | ] %
Edge [ | | ] %		K [ | | ] % S [ | | ] % Run [ | | ] %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS: _____

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 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*
 Adjacent landuse: Left bank: Score Type Right bank: Score Type
 0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %
 Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
 No flow Low Moderate High Flood
 (dry/isolated) (=watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *no change*

	None	Little	<u>Some</u>	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						<i>no change</i>					
	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											
Exotic											
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name			
Date	[27 / 10 / 2012]	Project Name	
Time (24 hrs)	[07:45]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity µS/cm@25°C	[110 / 40] <i>SPC 1974</i>	[ | | ]	2010.5
Water Temperature °C	[19 / 16 ]	[ | | ]	2080.5
pH	[8 / 10 ]	[ | | ]	2100.5
Dissolved O ₂ (%)	[110 / 10] <i>DO = 89.0</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 955.50</i>	[ | | ]	2030.5
Air Temperature °C	[ | / 1] <i>ORP = 136.5</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO₃	[ | | ] <i>SAL = 0.74</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO₃	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | / 1 ]	[ | | ]	2046.5
Velocity m/s	[ | / 1 ]	[ | | ]	240.0
Gauge Height m	[ | / 1 ]	[ | | ]	100.0
Discharge m³/s	[ | / 1 ]	[ | | ]	140.0

Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain *11.5mm* Cloud cover *100%* Wind *brake*

Comments: *sp. rain 12.00 then 0.1mm*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *90* % Water Odour: *N/A*

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L *S* M E In water column: *N* L S M E

Macrophytes: Emergent: N L *S* M *E* Submerged: *N* L S M E

Floating: *N* L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys */ /* by _____ Checked on */ /* by _____

Entered into AQEIS */ /* by _____ Checked on */ /* by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (=watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						Egeria					

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: no change

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive localised slumping

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other high flow

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 40 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank no change m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank no change m Right bank no change m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E no change Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E

N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2 2 8 . 1 9] 271.0	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 6 . 1 9]	[]	2080.5
pH	[7 . 1 2]	[]	2100.5
Dissolved O_2 mg/l	[7 . 8 8] $\text{DO} \% = 80.9$	[]	2351.5
Turbidity NTU	[] $\text{TDS} = 176.15$	[]	2030.5
Air Temperature $^\circ\text{C}$	[.] $\text{SAL} = 0.13$	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.] $\text{ORP} = 64.0$	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments: *—*
Today: Rain *Yes + 5mm* Cloud cover *20%* Wind *NE!*
 Comments: *—*

Shading: 15 %		Water Odour: Nil										
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other		
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E
	Floating:	N	L	S	M	E						
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E
							Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)				

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* Some Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand *Silt* Other *high - flow on bank*

Algae: On substrate: None *Little* Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep *Pool* Run Riffle

(circle all types) Undercut bank *LWD* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) % *low water*

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow *Low* Moderate High Flood

(dry/isolated) (*<*watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *no change*

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[2 2 7 . 5] 269.2	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 6 . 9]	[]	2080.5
pH	[7 . 2 4]	[]	2100.5
Dissolved O_2 mg/l	[1 7 . 8 6] DO% = 81.2	[]	2351.5
Turbidity NTU	[] TDS = 174.85	[]	2030.5
Air Temperature $^\circ\text{C}$	[.] SAT = 0.13	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.] ORP = 97.8	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0
Discharge Method:	measured ☐ (gauged)	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* *Some* Moderate ExtensiveWater colour: Clear Green *Opaque* Tannin OtherSediment deposits: None Sand *Silt* Other *hgn. flav.*Algae: On substrate: None *Little* *Some* Moderate ExtensiveIn water column: *None* Little Some Moderate ExtensiveWater odour: *No* Yes SpecifySubstrate odour: No *Yes* Specify *minor - surface*

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow *Deep* *Pool* *Run* Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow *Low* Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)Width of riparian zone: Left bank m *no change* Right bank m* Bare ground None Little *Some* Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

no change

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (Triglochin)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	Project Name _____
Date [21/08/2014]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [14:50 0830]	Submitted [ | | | | | ]
Project Code [ | | | | | ]	Received [ | | | | | ]
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[218 | 31 | 17] 283 SPL = 350.2	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[14 | 1 | 3 ]	[ | | ]	2080.5
pH	[7 | 1 | 34 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[6 | 1 | 3] DO% = 61.9	[ | | ]	2351.5
Turbidity NTU	[ | | | ] PD5 = 35.5	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 1 | ] Dep = 98.0	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | 1 | ] Sal = 0.17	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | 1 | ] TDS = 231.40	[ | | ]	2114.5
Transparency (secchi) m	[ | | 1 | ]	[ | | ]	2046.5
Velocity m/s	[ | 1 | | ]	[ | | ]	240.0
Gauge Height m	[ | | 1 | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | 1 | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain +5mm Cloud cover 0% Wind Breezy

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other minor groundwater intrusion

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear *Green* *Opaque* Tannin *Other*

Sediment deposits: None *Sand* *Silt* Other *high-flow debris*

Algae: On substrate: None Little *Some* Moderate Extensive

In water column: *None* Little *Some* Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal *Shik* Scum Foaming Other *glw intrusion*

Variety of habitat: Shallow *Deep* Pool Run Riffle

(circle all types) Undercut bank LWD *30* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow *Low* Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width) *no change*

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

no change

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



Site Number [ | | | | | | | ]	Sample Number [ | | | | | | | | | | | | | ]	
Site Name _____		
Date [25 | 10 | 8 | 12 | 0 | 2 | 1 | ] 1:46	Project Name _____	
Time (24 hrs) [6 | 7 : 45]	QHSS Analysis No. [ | | | | | | ]	
Project Code [ | | | | | | | ]		
Run Code [ | | | | | | | ]	Submitted	
Party [ | | ] [ | | ] [ | | ]	Received	

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^{\circ}\text{C}$	[2 8 6 . 1 4] <i>SAL 367.4</i>	[]	2010.5
Water Temperature $^{\circ}\text{C}$	[1 3 . 9]	[]	2080.5
pH	[7 . 3]	[]	2100.5
Dissolved O_2 mg/l	[6 . 1] <i>DO = 59.1</i>	[]	2351.5
Turbidity NTU	[] <i>TDS = 238.55</i>	[]	2030.5
Air Temperature $^{\circ}\text{C}$	[.] <i>ORP = 89.1</i>	[]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[.] <i>SAL = 0.18</i>	[]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain ... *15 mm* ... Cloud cover ... *0%* ... Wind ... *Breeze* ...

Comments: ... *Fine today* ...

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other floating debris

Algae: On substrate: N I S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R %	E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K %	S %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R %	E %
Edge [ | | ] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %	Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types)

Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 40 % Exposed by low/no flow

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dis/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [130 7.2]	[]	2010.5
Water Temperature	$^\circ\text{C}$ [16 0 4]	[]	2080.5
pH	[7 0 1]	[]	2100.5
Dissolved O_2	mg/l [6 0 4]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^\circ\text{C}$ [0]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [0]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [0]	[]	2114.5
Transparency (secchi)	m [0]	[]	2046.5
Velocity	m/s [0]	[]	240.0
Gauge Height	m [0]	[]	100.0
Discharge	m^3/s [0]	[]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments: _____
Today: Rain +5 mm Cloud cover 90-90 Wind Yes, breeze
 Comments: _____

Shading: <u>W</u> %		Water Odour:																
Water Surface Condition: <u>Normal</u>		Slick		Scum			Foaming			Other								
Algae:	On substrate:	N	<u>L</u>	S	M	E	In water column:		<u>N</u>	L	S	M	E					
Macrophytes:	Emergent:	N	L	<u>S</u>	M	E	Submerged:		<u>N</u>	L	S	M	E					
	Floating:	<u>N</u>	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

Riffle (R)	[] [] [] %	Run	[] [] [] %	Macrophytes	[] [] [] %	in: R	 %	E	 %
Pool (rocky-K)	[] [] [] %	Pool (sandy-S)	[] [] [] %			K	 %	S	 %
Dry	[] [] [] %	Riffle + Run + Pool + Dry = 100%		Algae	[] [] [] %	in: R	 %	E	 %
Edge	[] [] [] %					K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] [] [] %			Run	 %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None

Little

Some

Moderate

Extensive

Water colour:

Clear

Green

Opaque

Tannin

Other

Sediment deposits:

None

Sand

Silt

Other

Algae: On substrate:

None

Little

Some

Moderate

Extensive

In water column:

None

Little

Some

Moderate

Extensive

Water odour:

No

Yes

Specify

Substrate odour:

No

Yes

Specify

Water surface:

Normal

Slick

Scum

Foaming

Other

Variety of habitat:

Shallow

Deep

Pool

Run

Riffle

(circle all types)

Undercut bank

LWD

Macrophytes

Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow

Low

Moderate

High

Flood

(dry/isolated)

(<watermark)

(=watermark)

(>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone:

Left bank m

Right bank m

* Bare ground

None

Little

Some

Moderate

Extensive

* Grass

None

Little

Some

Moderate

Extensive

* Shrubs

None

Little

Some

Moderate

Extensive

* Trees <10 m high

None

Little

Some

Moderate

Extensive

* Trees >10 m high

None

Little

Some

Moderate

Extensive

Presence of exotic riparian species

None

Little

Some

Moderate

Extensive

Width of continuous tree zone from bank:

Left bank m

Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						Egeria					
.....											

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [25/08/2011]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [09:30]	
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted [A B C D E F G H I J K L M N]
Party [ | | ] [ | | ] [ | | ]	Received [ | | ] [ | | ] [ | | ]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[231.17] <i>317.1</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[12.1 ]	[ | | ]	2080.5
pH	[7.39 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[4.99] <i>DO% = 46.0</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 206.05</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] <i>ORP = 95.8</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] <i>SAL = 0.15</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] **Comments:** _____

Today: Rain *5mm* Cloud cover *0/10* Wind *11*

Comments: *Fine*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *30* % **Water Odour:** *Nil*

Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other *flaking debris*

Algae: On substrate: N ☒ S ☐ M ☐ E ☐ In water column: N ☒ S ☐ M ☐ E ☐

Macrophytes: Emergent: N ☒ S ☐ M ☐ E ☐ Submerged: ☒ N ☐ L ☐ S ☐ M ☐ E ☐

Floating: ☒ N ☐ L ☐ S ☐ M ☐ E ☐

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)Upstream landuse: *No Change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other *W.S.*

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other *fraying debris*

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) *60* % *low level*

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)Width of riparian zone: *No Change*

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E *No Change* Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E

..... N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____	Project Name _____																												
Date [25/10/2011]	QHSS Analysis No. []																												
Time (24 hrs) [11:04]	Submitted																												
Project Code []	Received																												
Run Code []	<table border="1"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																
Party [] [] []																													

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l} [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s} [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | ]		[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments:
Today: Rain Cloud cover Wind
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % **Water Odour:**

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae:	On substrate:	None	Little	Some	Moderate	Extensive					
	In water column:	None	Little	Some	Moderate	Extensive					
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone: Left bank m Right bank m											
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank: Left bank m Right bank m											
None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

**Queensland
Government**
**Natural Resources
and Mines**

Site Number		Sample Number	
Site Name			
Date		Project Name	
Time (24 hrs)		QHSS Analysis No.	
Project Code			
Run Code		Submitted	A B C D E F G H I J K L M N
Party		Received	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	SPC	Quality	Variable
Conductivity	$\mu\text{S/cm}@25^\circ\text{C}$	[11711.16] 221.2	[]	2010.5
Water Temperature	$^\circ\text{C}$	[1131.12]	[]	2080.5
pH		[171.44]	[]	2100.5
Dissolved O_2	mg/l	[161.30] DO% = 60.3	[]	2351.5
Turbidity	NTU	[] TDS = 143.65	[]	2030.5
Air Temperature	$^\circ\text{C}$	[.] ORP = 102.9	[]	2065.5
Total Alkalinity	mg/l CaCO_3	[.] SAR = 0.11	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi)	m	[.]	[]	2046.5
Velocity	m/s	[.]	[]	240.0
Gauge Height	m	[.]	[]	100.0
Discharge	m^3/s	[.]	[]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain ☒ 5 mm Cloud cover 100 Wind Strong breeze
Comments:

Shading: 30 % Water Odour: Nil																			
Water Surface Condition: Normal					Slick			Scum			Foaming			Other					
Algae:		On substrate:			N	L	S	M	E	In water column:		N	L	S	M	E			
Macrophytes:		Emergent:			N	L	S	M	E	Submerged:		N	L	S	M	E			
		Floating:			N	L	S	M	E										
Impacts:		Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
		N = none			L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)					

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little *Some* Moderate Extensive

In water column: *None* Little *Some* Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow *Deep* *Pool* Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank *No change* Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	<i>No change</i> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[1 5 4 .] [7] 196.3	[]	2010.5
Water Temperature °C	[1 3 .] [7]	[]	2080.5
pH	[7 .] [36]	[]	2100.5
Dissolved O ₂ mg/l	[6 .] [54] DO% = 64.0	[]	2351.5
Turbidity NTU	[] TDS = 128.05	[]	2030.5
Air Temperature °C	[.] ORP = 107.7	[]	2065.5
Total Alkalinity mg/l CaCO ₃	[.] SAL = 0.09	[]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m ³ /s	[.]	[]	140.0

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:
Today: Rain *5 AM* Cloud cover *5%* Wind *Westerly - gusting*
 Comments:

Shading: 50 % Water Odour: M.I.

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Riffle (R)	[] %	Run	[] %	Macrophytes	[] %	in: R	 %	E	 %	
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K	 %	S	 %	Run	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] %	in: R	 %	E	 %	
Edge	[] %				K	 %	S	 %	Run	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt						[] %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt OtherAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate ExtensiveWater odour: No Yes SpecifySubstrate odour: No Yes SpecifyWater surface: Normal Slick Scum Foaming OtherVariety of habitat: Shallow Deep Pool Run Riffle(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive* Grass None Little Some Moderate Extensive* Shrubs None Little Some Moderate Extensive* Trees <10 m high None Little Some Moderate Extensive* Trees >10 m high None Little Some Moderate ExtensivePresence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm}@25^{\circ}\text{C}$ []	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ [•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading: %															Water Odour:														
Water Surface Condition:		Normal					Slick					Scum					Foaming					Other							
Algae:	On substrate:	N	L	S	M	E	In water column:					N	L	S	M	E													
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:					N	L	S	M	E													
	Floating:	N	L	S	M	E																							
Impacts:	Human	N	L	S	M	E	Pastoral animals					N	L	S	M	E	Non-pastoral animals					N	L	S	M	E			
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)												

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | | | ]	Sample Number	[ | | | | | | | ]
Site Name	1.23 Field Blank		
Date	[25/08/2011]	Project Name	
Time (24 hrs)	[12:35]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1190 | 11] 242.1	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[17 | 18 ]	[ | | ]	2080.5
pH	[7 | 8 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[71 | 67] DO = 74.6	[ | | ]	2351.5
Turbidity NTU	[ | | ] ORP = 114.8	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] TDS = 157.30	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | 0] SR = 0.12	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | 0 ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | | 0 ]	[ | | ]	2046.5
Velocity m/s	[ | | | 0 ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | 0 ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged)	obtained from ☐ rating curve	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments:
 Today: Rain 15 mm Cloud cover 50% Wind gusty
 Comments: Fine

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 5% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No Change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) ... 1.5 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[119 11.6] S/cm 202.4	[]	2010.5
Water Temperature	°C [14 0.2]	[]	2080.5
pH	[7.09]	[]	2100.5
Dissolved O ₂	mg/l [5.42] DO% = 53.2	[]	2351.5
Turbidity	NTU [] TDS = 157.30	[]	2030.5
Air Temperature	°C [0.] ORP = 63.7	[]	2065.5
Total Alkalinity	mg/l CaCO ₃ [0.] SAR = 0.12	[]	2113.5
Phenol Alkalinity	mg/l CaCO ₃ [0.]	[]	2114.5
Transparency (secchi)	m [0.]	[]	2046.5
Velocity	m/s [0.]	[]	240.0
Gauge Height	m [0.]	[]	100.0
Discharge	m ³ /s [0.]	[]	140.0

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain *st. rain* Cloud cover *0%* Wind *breeze*
Comments:

Shading: 5% Water Odour: (gross)

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	Run %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 1. Irrigated cropping, intensive forestry or heavy grazing 2. Non-irrigated cropping, moderate grazing 3. Light grazing, vegetation clearing 4. Natural											
Local catchment erosion: None Little <u>Some</u> Moderate Extensive											
Water colour: Clear Green <u>Opaque</u> Tannin Other											
Sediment deposits: <u>None</u> Sand Silt Other											
Algae: On substrate: None Little Some Moderate <u>Extensive</u>											
In water column: None <u>Little</u> Some Moderate Extensive											
Water odour: No <u>Yes</u> Specify <u>Organic</u>											
Substrate odour: <u>No</u> Yes Specify											
Water surface: Normal Slick Scum Foaming Other											
Variety of habitat: Shallow <u>Deep</u> <u>Pool</u> Run Riffle											
(circle all types) Undercut bank <u>LWD</u> Macrophytes Other											
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
<u>No flow</u> (dry/isolated) Low (<watermark) Moderate (=watermark) High (>watermark) Flood											
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone: Left bank m Right bank m											
* Bare ground None Little <u>Some</u> Moderate Extensive											
* Grass None Little <u>Some</u> Moderate Extensive											
* Shrubs None Little <u>Some</u> Moderate Extensive											
* Trees <10 m high None Little <u>Some</u> Moderate Extensive											
* Trees >10 m high None Little <u>Some</u> Moderate Extensive											
Presence of exotic riparian species None Little <u>Some</u> Moderate Extensive											
Width of continuous tree zone from bank: Left bank m Right bank m											
None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Comments:											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



Site Number []	Sample Number []																												
Site Name _____																													
Date [12 5 10 8 12 0 1 1] \ 297	Project Name _____																												
Time (24 hrs) [[14 : 00]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[3 4 2 . 2] 408.0	[]	2010.5
Water Temperature $^\circ\text{C}$	[1 6 . 6]	[]	2080.5
pH	[18 . 21]	[]	2100.5
Dissolved O_2 mg/l	[19 . 09] DO = 93.3	[]	2351.5
Turbidity NTU	[] TDS = 265.20	[]	2030.5
Air Temperature $^\circ\text{C}$	[.] ORP = 110.9	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.] SAL = 0.20	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *+5mm* Cloud cover *0%* Wind
Comments:

Shading: 5% Water Odour: Nil																
Water Surface Condition: Normal Slick Scum Foaming Other																
Algae:		On substrate: N L S M E					In water column: N L S M E									
Macrophytes:		Emergent: N L S M E					Submerged: N L S M E									
		Floating: N L S M E														
Impacts:		Human N L S M E					Pastoral animals N L S M E					Non-pastoral animals N L S M E				
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)																

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial
1. Irrigated cropping, intensive forestry or heavy grazing
2. Non-irrigated cropping, moderate grazing
3. Light grazing, vegetation clearing
4. Natural

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None *Sand* *Silt* Other *high flow*

Algae: On substrate: None Little *Some* Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep *Pool* Run Riffle
(circle all types) Undercut bank *LWD* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) % *30*

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow *Low* Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

Width of riparian zone:		Left bank m		Right bank m	
* Bare ground	None	Little	Some	Moderate	Extensive
* Grass	None	Little	Some	Moderate	Extensive
* Shrubs	None	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive
Width of continuous tree zone from bank:		Left bank m		Right bank m	
None = 0%	Little = 1-10%	Some = 10-50%	Moderate = 50-75%	Extensive >75%	* Can add to >100%

Native													
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E		
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E		
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E		
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E		
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E		
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E		
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E		
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E		
.....	N	L	S	M	E		N	L	S	M	E		
Exotic													
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E		
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E		
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E		
.....	N	L	S	M	E		N	L	S	M	E		
Comments:													
.....													
N = none			L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)	

WATER QUALITY SAMPLING FIELD SHEET

Site Number [] [] [] [] [] [] [] [] Sample Number [] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
 Site Name _____
 Date 25/10/2014 14:21 Project Name _____
 Time (24 hrs) 14:21 QHSS Analysis No. [] [] [] [] [] [] [] []
 Project Code [] [] [] [] [] [] [] [] Submitted _____
 Run Code [] [] [] [] [] [] [] [] Received _____
 Party [] [] [] [] [] [] [] []

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$ [] [] [] [] [] []		[] [] []	2010.5
Water Temperature $^\circ\text{C}$ [] [] [] [] [] []		[] [] []	2080.5
pH [] [] [] [] [] []		[] [] []	2100.5
Dissolved O_2 mg/l [] [] [] [] [] []		[] [] []	2351.5
Turbidity NTU [] [] [] [] [] []		[] [] []	2030.5
Air Temperature $^\circ\text{C}$ [] [] [] [] [] []		[] [] []	2065.5
Total Alkalinity mg/l CaCO_3 [] [] [] [] [] []		[] [] []	2113.5
Phenol Alkalinity mg/l CaCO_3 [] [] [] [] [] []		[] [] []	2114.5
Transparency (secchi) m [] [] [] [] [] []		[] [] []	2046.5
Velocity m/s [] [] [] [] [] []		[] [] []	240.0
Gauge Height m [] [] [] [] [] []		[] [] []	100.0
Discharge m^3/s [] [] [] [] [] [] [] [] [] [] [] []		[] [] []	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [] [] [] % Run [] [] [] % Macrophytes [] [] [] % in: R _____ % E _____ %
 Pool (rocky-K) [] [] [] % Pool (sandy-S) [] [] [] % K _____ % S _____ % Run _____ %
 Dry [] [] [] % Riffle + Run + Pool + Dry = 100% Algae [] [] [] % in: R _____ % E _____ %
 K _____ % S _____ % Run _____ %
 Edge [] [] [] % Blanketing silt [] [] [] %
 Edge is % of habitat available to sample from L and R banks

COMMENTS: _____

 (Office use only) Entered into Hydsys _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____
 Entered into AQEIS _____ / _____ / _____ by _____ Checked on _____ / _____ / _____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		Low	Moderate	High	Flood						
(dry/isolated)		(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

**Queensland
Government**
Natural Resources
and Mines

Site Number	[][][][][][]	Sample Number	[][][][][][][][][][][][][][][][][]																												
Site Name																															
Date	[2][5]/[08]/[20][21]	Project Name	/-30 _____																												
Time (24 hrs)	[1][0]:[45]	QHSS Analysis No.	[][][][][][][]																												
Project Code	[][][][][][][]	Submitted	<table border="1" style="float: right; font-size: small;"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[][][][][][][]	Received	<table border="1" style="float: right; font-size: small;"> <tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>																												
Party	[][][] [][][] [][][]																														

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	SPC	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [314 1 . 3]	409.8	[]	2010.5
Water Temperature	$^\circ\text{C}$ [1 6 . 3]		[]	2080.5
pH	[8 . 26]		[]	2100.5
Dissolved O_2	mg/l [8 . 79]	$\text{DOI} = 89.7$	[]	2351.5
Turbidity	NTU []	$\text{TDS} = 266.50$	[]	2030.5
Air Temperature	$^\circ\text{C}$ [.]	$\text{ORP} = 97.5$	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [.]	$\text{SAL} = 0.20$	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [.]		[]	2114.5
Transparency (secchi)	m [.]		[]	2046.5
Velocity	m/s [.]		[]	240.0
Gauge Height	m [.]		[]	100.0
Discharge	m^3/s [.]		[]	140.0
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments: *Fine*
Today: Rain *+5 mm* Cloud cover *0%* Wind *Slight breeze*
 Comments: _____

Shading: 5 % Water Odour: Nil																
Water Surface Condition: Normal Slick Scum Foaming Other																
Algae:		On substrate: N L S M E					In water column: N L S M E									
Macrophytes:		Emergent: N L S M E					Submerged: N L S M E									
		Floating: N L S M E														
Impacts:		Human N L S M E					Pastoral animals N L S M E					Non-pastoral animals N L S M E				
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)																

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R	 %	E	 %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K	 %	S	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R	 %	E	 %
Edge	[] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %		Run	 %

(Office use only) Entered into Hydsys _____ by _____ Checked on ____ / ____ / ____ by _____
Entered into AQEIS _____ by _____ Checked on ____ / ____ / ____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *no change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 15 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m *no change* Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumeecs

WEATHER: *Rain in past week:* Yes [] No [] Comments:
Today: Rain *+5mm* Cloud cover *0%* Wind *slight breeze*
 Comments:

Shading: 15 %		Water Odour:																									
Water Surface Condition:		Normal					Slick					Scum					Foaming					Other					
Algae:	On substrate:	N	L	S	M	E											In water column:	N	L	S	M	E					
Macrophytes:	Emergent:	N	L	S	M	E											Submerged:	N	L	S	M	E					
	Floating:	N	L	S	M	E																					
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E									
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)										

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R %	E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K %	S %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R %	E %
Edge [] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %	Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify Organic - Algal odour

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 60 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<u>Water Ribbon (Triglochin)</u>	N	L	S	M	E
Duckweed	N	L	S	M	E	<u>Water Lettuce (Pistia stratiotes)</u>	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	<u>Water Primrose (Ludwigia)</u>	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	<u>Sedge (Cyperus)</u>	N	L	S	M	E
Hydrilla	N	L	S	M	E	<u>Common Rush (Juncus)</u>	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	<u>Cumbungi (Typha)</u>	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	<u>Slender Knotweed (Persicaria)</u>	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	<u>Alligator Weed (Alternanthera)</u>	N	L	S	M	E
Salvinia	N	L	S	M	E	<u>Elodea</u>	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<u>Egeria</u>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *5 am* Cloud cover *0%* Wind *Light breeze*
Comments: *1st*

PERCENT OF HABITAT TYPES IN 100 m REACH:

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 15 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____	_____																												
Date [2 6 1 0 8 1]	Project Name <u>1-39 DUD2 TRIP-1</u>																												
Time (24 hrs) [0 6 : 5 0]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1 | 8 | 1 | 0 | ] <i>2317</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 3 | . | 3 | ]	[ | | ]	2080.5
pH	[ | 8 | . | 2 | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | 5 | . | 8 | ] <i>DO = 56.5</i>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <i>TPS = 1501.50</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ] <i>ORP = 105.6</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] <i>SM = 1.19</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | | ]	[ | | ]	140.0
Discharge Method: measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments: *Cold, -1°C*
Today: Rain *15 mm* Cloud cover *0/10* Wind *W 1*
 Comments: *Cold*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: Nil																			
Water Surface Condition: Normal Slick Scum Foaming Other																			
Algae:		On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:		Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
		Floating:	N	L	S	M	E												
Impacts:		Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
		N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)																	

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | | ] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: *None* Sand Silt Other

Algae: On substrate: None *Little* Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow *Deep* Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 0 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						<i>no change</i>					
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [] [] [] [] [] [] [] [] Sample Number [] [] [] [] [] [] [] [] [] [] [] [] [] []
 Site Name _____
 Date 21/01/2012 14:40 Project Name _____
 Time (24 hrs) [07:30] QHSS Analysis No. [] [] [] [] [] [] [] []
 Project Code [] [] [] [] [] [] [] [] Submitted _____
 Run Code [] [] [] [] [] [] [] [] Received _____
 Party [] [] [] [] [] [] [] []

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	SPC	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[1832]	1168	[] [] []	2010.5
Water Temperature $^\circ\text{C}$	[10.0]		[] [] []	2080.5
pH	[8.49]		[] [] []	2100.5
Dissolved O_2 mg/l	[8.67]	DO = 76.9	[] [] []	2351.5
Turbidity NTU	[] [] []	TDS = 760.50	[] [] []	2030.5
Air Temperature $^\circ\text{C}$	[] [] []	air = 113.6	[] [] []	2065.5
Total Alkalinity mg/l CaCO_3	[] [] [] [] []	SA = 0.58	[] [] []	2113.5
Phenol Alkalinity mg/l CaCO_3	[] [] [] [] []		[] [] []	2114.5
Transparency (secchi) m	[] [] [] [] []		[] [] []	2046.5
Velocity m/s	[] [] [] [] []		[] [] []	240.0
Gauge Height m	[] [] [] [] []		[] [] []	100.0
Discharge m^3/s	[] [] [] [] [] [] [] []		[] [] []	140.0
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: Rain in past week: Yes [X] No [] Comments: ...Cold...
 Today: Rain 5 mm Cloud cover 0% Wind 14.1
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 80% Water Odour: Nil
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: no change

Riffle (R) [] [] [] %	Run [] [] [] %	Macrophytes [] [] [] % in: R % E %
Pool (rocky-K) [] [] [] %	Pool (sandy-S) [] [] [] %	K % S % Run %
Dry [] [] [] %	Riffle + Run + Pool + Dry = 100%	Algae [] [] [] % in: R % E %
Edge [] [] [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] [] [] %

COMMENTS: _____

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types)

Undercut bank

LWD

Macrophytes

Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated)

(<watermark)

(=watermark)

(>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name _____
 Date [26/08/2012] Project Name _____
 Time (24 hrs) [18:05] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [| | | | |]
 Party [| |] [| |] [| |] Received [| | | | |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[19127] <i>SPC 7368</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[17.19 ]	[ | | ]	2080.5
pH	[8.47 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[110.48] <i>DO = 88.6</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 890.50</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] <i>Temp = 106.5</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] <i>SM = 0.69</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0
Discharge Method:	measured ☐ (gauged)	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain *15mm* Cloud cover *0%* Wind *Nil*
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *10* % Water Odour: _____
 Water Surface Condition: *Normal* Slick Scum Foaming Other _____
 Algae: On substrate: *(N) L S M E* In water column: *(N) L S M E*
 Macrophytes: Emergent: *(N) L S M E* Submerged: *(N) L S M E*
 Floating: *(N) L S M E*
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

no change
 Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 K % S % Run %
 Edge [| |] % Blanketing silt [| |] %
 Edge is % of habitat available to sample from L and R banks

COMMENTS: _____
 (Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types)

Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 50 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach.**Native**Azolla N L S M E Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

AEF003

B241.2



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |]

Site Name

Sample Number [| | | | |]

Date

[21 / 09 / 2012]

Time (24 hrs)

[15:05]

Project Name

Project Code

[| | | | |]

QHSS Analysis No. [| | | | |]

Run Code

[| | | | |]

Party

[| |] [| |] [| |]

Submitted

Received

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude

Reach orientation (looking downstream):

N

NE

E

SE

S

Longitude

SW

W

NW

Datum:

WATER QUALITY

Parameter

Value

Quality

Variable

Conductivity

 $\mu\text{S/cm @ } 25^\circ\text{C}$

[31051.7]

SPC

340.5

Water Temperature

 $^\circ\text{C}$

[19.17]

pH

[7.83]

Dissolved O_2

mg/l

[10.23]

DO = 90.0

Turbidity

NTU

[| | |]

TDS = 221.00

Air Temperature

 $^\circ\text{C}$

[| | |]

SAL = 0.16

Total Alkalinity

mg/l CaCO_3

[| | | |]

OLP = 68.9

Phenol Alkalinity

mg/l CaCO_3

[| | | |]

Transparency (secchi)

m

[| | | |]

Velocity

m/s

[| | | |]

Gauge Height

m

[| | | |]

Discharge

 m^3/s

[| | | |]

Discharge Method:

measured (gauged) ☐obtained from rating curve ☐estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week:

Yes [X]

No []

Comments:

Today:

Rain ... Minimal

Comments:

Cloud cover ... NIL

Wind ... Gusting

OBSERVATIONS AT WATER SAMPLING SITE

(within 2 metres of sampling point or on closest bank)

Shading: 10.0 %

Water Odour: Nil

Water Surface Condition: Normal

Slick

Scum

Foaming

Other

Algae:

On substrate:

N L S M E

Macrophytes:

Emergent:

N L S M E

Floating:

N L S M E

In water column:

N L S M E

Submerged:

N L S M E

Impacts: Human

N

L

S

M

E

Pastoral animals

N

L

S

M

E

Non-pastoral animals

N

L

S

M

E

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)

[| |] %

Run

[| |] %

Pool (rocky-K)

[| |] %

Pool (sandy-S)

[| |] %

Dry

[| |] %

Riffle + Run + Pool + Dry = 100%

Edge

[| |] %

Edge is % of habitat available to sample from L and R banks

Macrophytes

[| |] % in: R

E

K

S

[| |] % in: R

E

K

S

Blanketing silt [| |] %

COMMENTS:

(Office use only) Entered into Hydsys

Entered into AQEIS

by

by

Checked on

Checked on

by

by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: Type no change Right bank: Score Type

Adjacent landuse: Left bank: Score Type 3. Light grazing, vegetation clearing
0. Urban/semi-urban, industrial 4. Natural
1. Irrigated cropping, intensive forestry or heavy grazing
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive
* Grass None Little Some Moderate Extensive
* Shrubs None Little Some Moderate Extensive
* Trees <10 m high None Little Some Moderate Extensive
* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native	N	L	S	M	E		N	L	S	M	E
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	
Date [21/09/2012]	Project Name _____
Time (24 hrs) [15:35]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[30103] <i>SPL 336.7</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[19.16]	[ | | ]	2080.5
pH	[7.12]	[ | | ]	2100.5
Dissolved O_2 mg/l	[8.16] <i>DO = 86.7</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 218.40</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] <i>RPO = 69.6</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] <i>SAL = 0.16</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: *Blowing*

Today: Rain *minimal* Cloud cover *40%* Wind *Westerly*

Comments: *RAKALI AT SITE*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *10* % Water Odour: *N.I.*

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N *L* S M E In water column: *N* L S M E

Macrophytes: Emergent: N *L* S M E Submerged: *N* L S M E

Floating: *N* L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys */ /* by _____ Checked on */ /* by _____

Entered into AQEIS */ /* by _____ Checked on */ /* by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None *Sand* Silt Other

Algae: On substrate: None Little *Some* Moderate Extensive

In water column: *None* Little *Some* Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep *Pool* Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *no change*

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____																													
Date [22 10 9 20 22 /]	Project Name _____																												
Time (24 hrs) [08 : 30]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^{\circ}\text{C}$	[310 | 6 | . | 6] 379.3	[ | | ]	2010.5
Water Temperature $^{\circ}\text{C}$	[1 | 5 | . | 5]	[ | | ]	2080.5
pH	[7 | . | 25]	[ | | ]	2100.5
Dissolved O_2 mg/l	[5 | . | 188] $100\% \quad 59.1$	[ | | ]	2351.5
Turbidity NTU	[ | | | ] $\text{SAT} = 0 - 18$	[ | | ]	2030.5
Air Temperature $^{\circ}\text{C}$	[ | | . | ] $\text{ORP} = 121.6$	[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | | . | ] $\text{TDS} = 243.10$	[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s}	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain *minimal* Cloud cover *0%* Wind *Breeze*
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 16 %		Water Odour: No change																
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E					
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E					
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] %	in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %			K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] %	in: R	 %	E	 %
Edge	[ | | ] %					K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %	Run	 %		

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *No change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 70 % *low flow bars*

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *No change*

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	<i>No change</i> Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

B24 1.6



**Queensland
Government**
Natural Resources
and Mines

Cal
22/9/21

$$\begin{aligned} 4 &= 4.10 \\ 7 &= 7.04 \\ 10 &= 10.09 \end{aligned}$$

EC
1913
@
25
= 1705
@
170

EC
1913
@
25
= 1705
@
370

9

9

9

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear *Green* *Opaque* Tannin Other

Sediment deposits: None *Sand* *Silt* Other *clay*

Algae: On substrate: None *Little* Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: *Normal* Slick Scum Foaming Other *debris*

Variety of habitat: *Shallow* *Deep* *Pool* Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) % *low flow bar*

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow *Low* Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m *no change* Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native *no change*

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

BCU 1.7



WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																														
Site Name _____																															
Date [2 1 0 9 2]	Project Name _____																														
Time (24 hrs) [1 2 : 1 0]	QHSS Analysis No. []																														
Project Code []	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Submitted</td> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td>Received</td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	Submitted	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Received														
Submitted		A	B	C	D	E	F	G	H	I	J	K	L	M	N																
Received																															
Run Code []																															
Party [] [] []																															

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$ [4 2 8 . 7] <i>SPC 487.8</i>	[]	2010.5
Water Temperature	$^\circ\text{C}$ [1 8 . 7]	[]	2080.5
pH	[7 . 4]	[]	2100.5
Dissolved O_2	mg/l [7 . 7] <i>DO% = 76.3</i>	[]	2351.5
Turbidity	NTU [6 . 1] <i>Access against Lab</i>	[]	2030.5
Air Temperature	$^\circ\text{C}$ [.] <i>SAT = 0.24</i>	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [.] <i>ORP = -1.0</i>	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [.] <i>TDS = 317.20</i>	[]	2114.5
Transparency (secchi)	m [.]	[]	2046.5
Velocity	m/s [.]	[]	240.0
Gauge Height	m [.]	[]	100.0
Discharge	m^3/s [.]	[]	140.0

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ *Comments:* _____
Today: Rain *20/9 (14 hrs)* Cloud cover *60%* Wind *High, gusty*
Comments: *windy*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 %		Water Odour:																
Water Surface Condition:		Normal			Slick			Scum			Foaming			Other				
Algae:	On substrate:	N	L	S	M	E	In water column:			N	L	S	M	E				
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:			N	L	S	M	E				
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)							

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %		K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R	 %	E	 %
Edge	[ | | ] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks							Run	 %
				Blanketing silt	[ | | ] %			

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) .. 10 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little *Some* Moderate Extensive* Grass None Little *Some* Moderate Extensive* Shrubs None Little *Some* Moderate Extensive* Trees <10 m high None Little *Some* Moderate Extensive* Trees >10 m high None Little *Some* Moderate ExtensivePresence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



SAMPLING LOCATION: Latitude 015 at junction Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments: *Five*
Today: Rain *Not in 2 hrs* Cloud cover *0%* Wind *mild breeze*
 Comments: *Five*

Shading:		% Water Odour: <i>M1</i>																
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	<i>S</i>	M	E	In water column:		<i>S</i>	L	S	M	E					
Macrophytes:	Emergent:	N	<i>S</i>	S	M	E	Submerged:		<i>S</i>	N	L	S	M	E				
	Floating:	N	<i>S</i>	S	M	E	<i>Lueningia</i>											
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	<i>M</i>	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K % S %	Run %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K % S %	Run %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	

(Office use only) Entered into Hydsys / / by Checked on / / by
 Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* *Some* Moderate Extensive

Water colour: Clear *Green* *Opaque* Tannin Other

Sediment deposits: None *Sand* Silt Other *heavy bank form*

Algae: On substrate: None *Little* Some Moderate Extensive
In water column: None *Little* Some Moderate Extensive

Water odour: No *Yes* Specify

Substrate odour: No *Yes* Specify

Water surface: Normal *Slick* Scum Foaming Other

Variety of habitat: Shallow *Deep* *Pool* Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow *Low* Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^{\circ}\text{C}$ [ | | | | ]	[ | | ]	2010.5
Water Temperature	$^{\circ}\text{C}$ [ | | | ]	[ | | ]	2080.5
pH	[ | | | ]	[ | | ]	2100.5
Dissolved O_2	mg/l} [ | | | ]	[ | | ]	2351.5
Turbidity	NTU} [ | | | ]	[ | | ]	2030.5
Air Temperature	$^{\circ}\text{C}$ [ | | | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | | ]	[ | | ]	2114.5
Transparency (secchi)	m} [ | | | | ]	[ | | ]	2046.5
Velocity	m/s} [ | | | ]	[ | | ]	240.0
Gauge Height	m} [ | | | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | | | ]	[ | | ]	140.0

WEATHER: *Rain in past week:* Yes [] No [] Comments:
Today: Rain Cloud cover Wind
 Comments:

Shading: % Water Odour:

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %		K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R	 %	E	 %
Edge	[ | | ] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %			

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	
Date [27/09/2011]	Project Name _____
Time (24 hrs) [11:15]	QHSS Analysis No. [ | | | | ]
Project Code [ | | | | ]	Submitted [ | | | | ]
Run Code [ | | | | ]	Received [ | | | | ]
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[206.6] <i>SPC 262.9</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[13.8 ]	[ | | ]	2080.5
pH	[7.68 ]	[ | | ]	2100.5
Dissolved O ₂ mg/l	[8.10] <i>DO = 78.2</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 770.95</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] <i>ASP = 135.7</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | . | ] <i>SAL = 0.13</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain .. *minimal* .. Cloud cover .. Wind ..

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *50* % Water Odour: *nil*

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S *M* E *Wine skin patches* In water column: N L S M E

Macrophytes: Emergent: N L *S* M E Submerged: N L S M E

Floating: *N* L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *no change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	<u>E</u>	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	Project Name _____
Date [22/09/2017]	Time (24 hrs) [11:45]
Project Code [ | | | | | ]	QHSS Analysis No. [ | | | | | ]
Run Code [ | | | | | ]	Submitted [ | | | | | ]
Party [ | | ] [ | | ] [ | | ]	Received [ | | | | | ]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[171.9 - 16] SPC 211.1	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[15.18 ]	[ | | ]	2080.5
pH	[7.34 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[7.42] DO = 75.3	[ | | ]	2351.5
Turbidity NTU	[ | | ] TDS = 137.15	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] SAL = 0.10	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ] ORP = 143.6	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | ]	[ | | ]	140.0
Discharge Method: measured ☐ (gauged) obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain minimal Cloud cover 0% Wind breeze
 Comments: Fine

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 40% Water Odour: M.I.
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: no change

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter		Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$	[]	[]	2010.5
Water Temperature	$^\circ\text{C}$	[•]	[]	2080.5
pH		[•]	[]	2100.5
Dissolved O_2	mg/l	[•]	[]	2351.5
Turbidity	NTU	[]	[]	2030.5
Air Temperature	$^\circ\text{C}$	[•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3	[•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3	[•]	[]	2114.5
Transparency (secchi)	m	[•]	[]	2046.5
Velocity	m/s	[•]	[]	240.0
Gauge Height	m	[•]	[]	100.0
Discharge	m^3/s	[•]	[]	140.0
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading: % Water Odour:																		
Water Surface Condition:		Normal		Slick			Scum			Foaming			Other					
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		Low	Moderate	High	Flood						
(dry/isolated)		(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:			Left bank m			Right bank m					
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:			Left bank m			Right bank m					
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)			

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WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []
Site Name _____	_____
Date [2 2 0 9 / 2 0 2 /]	Project Name _____
Time (24 hrs) [1 | 3 | : | 1 | 0 | ]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | | ]	Submitted _____
Run Code [ | | | | | | ]	Received _____
Party [ | | ] [ | | ] [ | | ]	_____

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[2211.4] 274.7	[]	2010.5
Water Temperature $^\circ\text{C}$	[15.9]	[]	2080.5
pH	[8.27]	[]	2100.5
Dissolved O_2 mg/l	[11.12] $\text{DO}_2 = 11.9$	[]	2351.5
Turbidity NTU	[] $\text{TDS} = 176.80$	[]	2030.5
Air Temperature $^\circ\text{C}$	[.] $\text{Temp} = 154.7$	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.] $\text{SM} = 0.13$	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments: *Nil*
Today: Rain *Miniman* Cloud cover *0%* Wind *strong breeze*
 Comments: *Nil, Fine*

Shading: 0 %		Water Odour: 1/1																
Water Surface Condition: Normal		Slack		Scum		Foaming		Other										
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R	 %	E	 %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K	 %	S	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R	 %	E	 %
Edge	[] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %		Run	 %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive
Water colour: Clear Green *Opaque* Turbid Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little *Some* Moderate Extensive
In water column: None Little *Some* Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank *LWD* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *no change*

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											
Exotic											
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | | | |] Sample Number [| | | | | | | | | | | | |]
 Site Name _____
 Date [22/09/2021] Project Name _____
 Time (24 hrs) [14:00] QHSS Analysis No. [| | | | |]
 Project Code [| | | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | | |] Received [| | | | | | | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[160.3] <i>SPL 197-8</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[15.6 ]	[ | | ]	2080.5
pH	[7.2 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[6.0] <i>DO% = 60.1</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 128.70</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] <i>TEMP = 160.6</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] <i>SAL = 0.09</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: *Nil*
 Today: Rain *min. rain* Cloud cover *0%* Wind *mid gust*
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *0* % Water Odour: *Nil*
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N *4* S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear *Green* Opaque Tannin Other

Sediment deposits: *None* Sand Silt Other

Algae: On substrate: None Little *Some* Moderate Extensive

In water column: *None* Little *Some* Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: *Normal* Slick Scum Foaming Other

Variety of habitat: Shallow *Deep* *Pool* Run Riffle

(circle all types) Undercut bank *LWD* Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little *Some* Moderate Extensive

* Shrubs None Little *Some* Moderate Extensive

* Trees <10 m high None Little *Some* Moderate Extensive

* Trees >10 m high None Little *Some* Moderate Extensive

Presence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<i>No change</i> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	Project Name _____
Date [22/01/2024]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [14:30]	
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	Submitted [A B C D E F G H I J K L M N]
	Received [ | | | | | ]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[427.1] SPC 472.0	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[19.14 ]	[ | | ]	2080.5
pH	[8.64 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[19.14] DOX = 101.6	[ | | ]	2351.5
Turbidity NTU	[ | | ] TDS = 306.80	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] SAT = 0.23	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] ORP = 141.3	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: nil

Today: Rain minimal Cloud cover 0% Wind mild breeze

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 15% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

E = >75% (extensive)

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WATER QUALITY SAMPLING FIELD SHEET

[illegible]

SAMPLING LOCATION: Latitude _____ Longitude _____									
Reach orientation (looking downstream):	N	NE	E	SE	S	SW	W	NW	Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^{\circ}\text{C}$ []	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ [•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0
Discharge Method:	measured ☐ (gauged) obtained from ☐ rating curve estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: <i>Rain in past week:</i> Yes [] No [] Comments:			
<i>Today:</i>	Rain	Cloud cover	Wind
	Comments:		

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:																		
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other								
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[] [] [] %	Run	[] [] [] %	Macrophytes	[] [] [] % in: R	 %	E	 %
Pool (rocky-K)	[] [] [] %	Pool (sandy-S)	[] [] [] %		K	 %	S	 %
Dry	[] [] [] %	Riffle + Run + Pool + Dry = 100%		Algae	[] [] [] % in: R	 %	E	 %
Edge	[] [] [] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks					Blanketing silt	[] [] [] %	Run	 %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [22/09/2012]	Time (24 hrs) [15:10]
Project Code [ | | | | | ]	QHSS Analysis No. [ | | | | | ]
Run Code [ | | | | | ]	Submitted _____
Party [ | | ] [ | | ] [ | | ]	Received _____

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[410 | .8] <i>SPC 464-2</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[21 | .2 ]	[ | | ]	2080.5
pH	[8 | .57 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[19 | .3] <i>DO = 105.1</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 306.60</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] <i>APP = 165.3</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] <i>SAL = 0.22</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain *Minimal* Cloud cover *0%* Wind *Breeze*
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *0* % Water Odour: *Nil*

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: *N L S M E* In water column: *N L S M E*

Macrophytes: Emergent: *N L S M E* Submerged: *N L S M E*

Floating: *N L S M E*

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:
 Adjacent landuse: Left bank: Score Type Right bank: Score Type
 0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other
 Bars: (bed surface protruding from normal water level and forming a bar) %
 Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground	None	Little	<u>Some</u>	Moderate	Extensive
* Grass	None	<u>Little</u>	Some	Moderate	Extensive
* Shrubs	None	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla	N	L	S	M	<u>E</u>	Water Ribbon (<i>Tyglachin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	<u>E</u>	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	<u>E</u>	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	<u>E</u>	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	<u>E</u>	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	<u>E</u>	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	<u>E</u>	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	<u>E</u>	.....	N	L	S	M	E
.....	N	L	S	M	<u>E</u>	.....	N	L	S	M	E

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	<u>E</u>	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	<u>E</u>	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	<u>E</u>	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	<u>E</u>	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [22 / 09 / 2012]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [16:05]	Submitted [A B C D E F G H I J K L M N]
Project Code [ | | | | | ]	Received [ | | | | | ]
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l} [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s} [ | . | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
No flow		Low	Moderate	High	Flood						
(dry/isolated)		(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____																													
Date [21/10/19/12/01/41]	Project Name _____																												
Time (24 hrs) [16:15]	QHSS Analysis No. []																												
Project Code []	Submitted																												
Run Code []	Received																												
Party [] [] []	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments:

Today: Rain Cloud cover Wind
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)					
Upstream landuse:					
Adjacent landuse: Left bank: Score		Type		Right bank: Score	
0. Urban/semi-urban, industrial		1. Irrigated cropping, intensive forestry or heavy grazing		3. Light grazing, vegetation clearing	
2. Non-irrigated cropping, moderate grazing		4. Natural			
Local catchment erosion:	None	Little	Some	Moderate	Extensive
Water colour:	Clear	Green	Opaque	Tannin	Other
Sediment deposits:	None	Sand	Silt	Other	
Algae: On substrate:	None	Little	Some	Moderate	Extensive
In water column:	None	Little	Some	Moderate	Extensive
Water odour:	No	Yes	Specify		
Substrate odour:	No	Yes	Specify		
Water surface:	Normal	Slick	Scum	Foaming	Other
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle
(circle all types)	Undercut bank		LWD	Macrophytes	Other
Bars: (bed surface protruding from normal water level and forming a bar) %					
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).					
	No flow	Low	Moderate	High	Flood
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)	

RIPARIAN ZONE (to maximum 100 m width)					
Width of riparian zone:		Left bank m		Right bank m	
* Bare ground	None	Little	Some	Moderate	Extensive
* Grass	None	Little	Some	Moderate	Extensive
* Shrubs	None	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive
Width of continuous tree zone from bank:		Left bank m		Right bank m	
None = 0%	Little = 1–10%	Some = 10–50%	Moderate = 50–75%	Extensive >75%	* Can add to >100%

MACROPHYTES											
Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



Site Number []	Sample Number []																												
Site Name _____																													
Date [23/10/2021]	Project Name _____																												
Time (24 hrs) [06:40]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>F</th><th>G</th><th>H</th><th>I</th><th>J</th><th>K</th><th>L</th><th>M</th><th>N</th> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

WATER QUALITY

NOTE: POTENTIAL
HUMAN COADIN CREEK.

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments: *Cool, early.*
Today: Rain *in min* Cloud cover *0%* Wind *N 11*
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 50 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Riffle (R) [] % Run [] % Macrophytes [] % in: R % E %

Pool (rocky-K)	[	]	%	Pool (sandy-S)	[	]	%	K %	S %	Run %
----------------	---	---	---	----------------	---	---	---	---------------	---------------	-----------------

Dry	[] %	Riffle + Run + Pool + Dry = 100%	Algae	[] % in: R %	E %
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Edge	[			]	%	K..... %	S..... %	Run..... %
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Edge is % of habitat available to sample from L and R banks	Blanketing silt	[]	[]	[]	%
---	-----------------	-----	-----	-----	---

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type <i>No change</i> Right bank: Score Type											
0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural 2. Non-irrigated cropping, moderate grazing											
Local catchment erosion: None Little <i>Some</i> Moderate Extensive											
Water colour: Clear Green <i>Opaque</i> Tannin Other											
Sediment deposits: None Sand Silt Other											
Algae: On substrate: None Little <i>Some</i> Moderate Extensive											
In water column: None Little Some Moderate Extensive											
Water odour: No Yes Specify											
Substrate odour: No Yes Specify											
Water surface: Normal Slick Scum Foaming Other											
Variety of habitat: Shallow <i>Deep</i> <i>Pool</i> Run Riffle											
(circle all types) Undercut bank LWD Macrophytes Other											
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
<i>No flow</i> (dry/isolated) Low (<watermark) Moderate (=watermark) High (>watermark) Flood											
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone: Left bank m Right bank m											
* Bare ground None Little <i>Some</i> Moderate Extensive											
* Grass None Little Some Moderate Extensive											
* Shrubs None Little Some Moderate Extensive											
* Trees <10 m high None Little Some Moderate Extensive											
* Trees >10 m high None Little Some Moderate Extensive											
Presence of exotic riparian species None Little Some Moderate Extensive											
Width of continuous tree zone from bank: Left bank m Right bank m											
None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native <i>No change</i>											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Comments:											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	Project Name _____
Date [23/09/2012]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [07:10]	Submitted _____
Project Code [ | | | | | ]	Received _____
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[110 | 42 | ] SPC 1433	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[110 | . 7 ]	[ | | ]	2080.5
pH	[8 | . 54 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[9 | . 39] DOI = 84.9	[ | | ]	2351.5
Turbidity NTU	[ | | | ] TDS = 929.50	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ] ORP = 176.9	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ] SAL = 0.72	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [] Comments: _____
Today: Rain Major Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10% **Water Odour:** _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:
 Adjacent landuse: Left bank: Score Type Right bank: Score Type

- 0 Urban/semi-urban, industrial
 1. Irrigated cropping, intensive forestry or heavy grazing
 2. Non-irrigated cropping, moderate grazing
 3. Light grazing, vegetation clearing
 4. Natural

Local catchment erosion: None Little Some Moderate Extensive
 Water colour: Clear Green Opaque Tannin Other
 Sediment deposits: None Sand Silt Other
 Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive
 Water odour: No Yes Specify
 Substrate odour: No Yes Specify
 Water surface: Normal Slick Scum Foaming Other
 Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %
 Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m
 * Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive
 Presence of exotic riparian species None Little Some Moderate Extensive
 Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (Triglochin)					
Duckweed						Water Lettuce (Pistia stratiotes)					
Hornwort (Ceratophyllum)						Water Primrose (Ludwigia)					
Stoneworts (Chara or Nitella)						Sedge (Cyperus)					
Hydrilla						Common Rush (Juncus)					
Water Milfoil (Myriophyllum)						Cumbungi (Typha)					
Pondweeds (Potamogeton)						Slender Knotweed (Persicaria)					
Ribbonweed (Vallisneria)											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (Eichhornia)						Alligator Weed (Alternanthera)					
Salvinia						Elodea					
Para Grass (Urochloa)						Egeria					

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | | | | | | ]
Site Name			
Date	[23/09/2021]	Project Name	
Time (24 hrs)	[08:10]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | | ]	Received	[ | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ 25}^\circ\text{C}$	[110911] <i>SPC 1524</i>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[110.1 ]	[ | | ]	2080.5
pH	[8.14 ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[110.57] <i>DO% = 94.3</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>TDS = 988.00</i>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ] <i>ORP = 162.1</i>	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ] <i>SAL = 0.77</i>	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain *W. N. N. N.!* Cloud cover *0%* Wind *N. N.*

Comments: *F. N. N.*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *90* % Water Odour: *N.!*

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S *M* E In water column: N *L* S M E

Macrophytes: Emergent: N *L* S M E Submerged: *N* L S M E

Floating: *N* L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys */ /* by _____ Checked on */ /* by _____

Entered into AQEIS */ /* by _____ Checked on */ /* by _____

Significant depth colour gradient
 Further back slip up.

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive bank slippage

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

* Bare ground None Little Some Moderate Extensive
* Grass None Little Some Moderate Extensive
* Shrubs None Little Some Moderate Extensive
* Trees <10 m high None Little Some Moderate Extensive
* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | | ]	Sample Number	[ | | | | | | | | | | | | ]
Site Name	B26 - SW 01.2		
Date	[1 | 8 | 1 | 1 | 0 | 1 | 2 | 1 | ]	Project Name	
Time (24 hrs)	[1 | 5 : | 1 | 0 | ]	QHSS Analysis No.	[ | | | | | ]
Project Code	[ | | | | | ]	Submitted	[A | B | C | D | E | F | G | H | I | J | K | L | M | N]
Run Code	[ | | | | | ]	Received	[ | | | | | | | | | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[2 | 1 | 3 | 0 | 1 | 7] 0.12 = SAL (ppt)	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 1 | 1 | 0 | 7] 73.0 = DTP (mV)	[ | | ]	2080.5
pH	[7 | 1 | 5] 157.5 = TDS (mg/L)	[ | | ]	2100.5
Dissolved O_2 mg/l	[7 | 1 | 3] 3 83.4 = DO	[ | | ]	2351.5
Turbidity NTU	[ | | | | ] 245.8 = OPC (mg/L)	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes ☒ No ☐ Comments:
 Today: Rain 10 am Cloud cover 0% Cast Wind 161
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30% Water Odour: 161

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt Other fine siltAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate ExtensiveWater odour: No Yes SpecifySubstrate odour: No Yes SpecifyWater surface: Normal Slick Scum Foaming OtherVariety of habitat: Shallow Deep Pool Run Riffle(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)Width of riparian zone: Left bank no change m Right bank m* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	<u>no change</u> Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____																													
Date [18 / 10 / 2021]	Project Name _____																												
Time (24 hrs) [15 : 45]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[2 | 2 | 7 | - | 0] 81.1 = ORP (mV)	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 1 | 1 | . | 3] 20.12 = SAL (ppt)	[ | | | ]	2080.5
pH	[ | 7 | . | 5] 7.56 = SPC (mg/L)	[ | | | ]	2100.5
Dissolved O_2 mg/l	[ | 7 | . | 3] 7.38 = 0/000	[ | | | ]	2351.5
Turbidity NTU	[ | | | | ] 158.6 = TDS (mg/L)	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | | . | ]	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | | | . | | ]	[ | | | ]	2046.5
Velocity m/s	[ | . | | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | | ]	[ | | | ]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *4.0 um* Cloud cover *100%* Wind *us?*

Comments: *unusable*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 %		Water Odour: Nil										
Water Surface Condition: Normal		Slick		Scum			Foaming			Other		
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E
	Floating:	N	L	S	M	E						
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E
							Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)		

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type No change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other high flow

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						No change					
Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[] [] [] [] [] [] []	Sample Number	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []
Site Name	B26-SW1.3		
Date	11/10/2021	Project Name	
Time (24 hrs)	08:45	QHSS Analysis No.	[] [] [] [] [] [] []
Project Code	[] [] [] [] [] [] []		
Run Code	[] [] [] [] [] [] []	Submitted	A B C D E F G H I J K L M N
Party	[] [] [] [] [] [] [] [] [] [] [] [] [] [] [] []	Received	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[2 | 8 | 3 | . | 0] 170.4 ORP (mV)	[ | | | ]	2010.5
Water Temperature $^\circ\text{C}$	[1 | 9 | . | 2] 0.15 SAL (ppt)	[ | | | ]	2080.5
pH	[7 | . | 1 | 6] 318.4 SCP (mg/L)	[ | | | ]	2100.5
Dissolved O_2 mg/l	[5 | . | 3 | 3] 57.7 % DO	[ | | | ]	2351.5
Turbidity NTU	[ | | | | ] 206.7 TDS (mg/L)	[ | | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	[ | | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | | ]	[ | | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | | ]	[ | | | ]	2114.5
Transparency (secchi) m	[ | | . | | | ]	[ | | | ]	2046.5
Velocity m/s	[ | . | | | ]	[ | | | ]	240.0
Gauge Height m	[ | | | . | | | ]	[ | | | ]	100.0
Discharge m^3/s}	[ | | | | . | | | | ]	[ | | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain ☒ Cloud cover *5%* Wind *W/L*

Comments: *H.A.F.*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30 % Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: ~~N~~ L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N 2 S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R %	E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K %	S %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R %	E %
Edge [ | | ] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %	Run %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other high flow

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 40 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

* Bare ground	None	Little	<u>Some</u>	Moderate	Extensive
* Grass	None	Little	Some	Moderate	Extensive
* Shrubs	None	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	<u>no change</u> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

[illegible]

SAMPLING LOCATION: Latitude _____ Longitude _____									
Reach orientation (looking downstream):	N	NE	E	SE	S	SW	W	NW	Datum: _____

WATER QUALITY									
Parameter		Value				Quality		Variable	
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$	[2 | 7 | 1 | 1 | 9]	168.8 = ORP (mw)			[ | | ]	2010.5		
Water Temperature	$^\circ\text{C}$	[1 | 8 | 0 | 1 | 6]	40.1 = SPC (deg C)			[ | | ]	2080.5		
pH		[7 | 0 | 1 | 2 | 3]	0.15 = SAC (pH)			[ | | ]	2100.5		
Dissolved O_2	mg/l	[5 | 1 | 0 | 0]	201.5 = TDS (mg/l)			[ | | ]	2351.5		
Turbidity	NTU	[ | | | | ]	55.6 = % TDS			[ | | ]	2030.5		
Air Temperature	$^\circ\text{C}$	[ | | | 0 | | ]				[ | | ]	2065.5		
Total Alkalinity	mg/l CaCO_3	[ | | | 0 | | ]				[ | | ]	2113.5		
Phenol Alkalinity	mg/l CaCO_3	[ | | | 0 | | ]				[ | | ]	2114.5		
Transparency (secchi)	m	[ | | | 0 | | ]				[ | | ]	2046.5		
Velocity	m/s	[ | 0 | | | ]				[ | | ]	240.0		
Gauge Height	m	[ | | | 0 | | ]				[ | | ]	100.0		
Discharge	m^3/s}	[ | | | | 0 | | | ]				[ | | ]	140.0		
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐		estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs					

WEATHER: *Rain in past week:* Yes [☒] No [☐] *Comments:*
Today: Rain *p + 10mm* Cloud cover *0%* Wind *NE*
Comments: *Fine*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 25 %		Water Odour: Nil										
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other		
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E
	Floating:	N	L	S	M	E						
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)				

PERCENT OF HABITAT TYPES IN 100 m REACH: <i>no change</i>																									
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R	.....	%	E	.....	%			
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	.....	%	S	.....	%	Run	.....	%
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	.....	%	E	.....	%			
Edge	[	|	|	]	%												K	.....	%	S	.....	%	Run	.....	%
Edge is % of habitat available to sample from L and R banks												Blanketing silt [ | | ] %													

COMMENTS:

.....

.....

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *no change* Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin OtherSediment deposits: None Sand Silt OtherAlgae: On substrate: None Little Some Moderate ExtensiveIn water column: None Little Some Moderate ExtensiveWater odour: No Yes SpecifySubstrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) 10 %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)Width of riparian zone: Left bank *no change* m Right bank m* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E *no change* Water Ribbon (Triglochin) N L S M E

Duckweed N L S M E Water Lettuce (Pistia stratiotes) N L S M E

Hornwort (Ceratophyllum) N L S M E Water Primrose (Ludwigia) N L S M E

Stoneworts (Chara or Nitella) N L S M E Sedge (Cyperus) N L S M E

Hydrilla N L S M E Common Rush (Juncus) N L S M E

Water Milfoil (Myriophyllum) N L S M E Cumbungi (Typha) N L S M E

Pondweeds (Potamogeton) N L S M E Slender Knotweed (Persicaria) N L S M E

Ribbonweed (Vallisneria) N L S M E N L S M E

..... N L S M E N L S M E

Exotic

Water Hyacinth (Eichhornia) N L S M E Alligator Weed (Alternanthera) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (Urochloa) N L S M E Egeria N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



Site Number [ | | | | | | ]	Sample Number [ | | | | | | | | | | | | ]
Site Name <u>B26 SW01.7</u>	
Date [ | 8 / 8 / 02 / 02 / 1]	Project Name <u>B26 SWM</u>
Time (24 hrs) [ | 1 : 4 : 5]	QHSS Analysis No. [ | | | | | ]
Project Code [5 | 1 | 1 | 4 | 8 | 1 | ]	
Run Code [ | | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

~~FD-302~~

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$ [2 | 6 | 5 | . | 1 | 1] 294.9 = SPC (mg/L)	[ | | ]	2010.5
Water Temperature	$^\circ\text{C}$ [1 | 9 | . | 1 | 7]	[ | | ]	2080.5
pH	[1 | 7 | . | 1 | 2 | 0]	[ | | ]	2100.5
Dissolved O_2	mg/l [5 | 4 | . | 1 | 7] 52.1 = % DO	[ | | ]	2351.5
Turbidity	NTU [1 | 9 | | 1 | . | ] 75 = TDS (mg/L)	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | . | | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | . | ] 0.14 = Salinity (ppt)	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | . | | ] -19.7 = DRP (mV)	[ | | ]	2046.5
Velocity	m/s [ | . | | ]	[ | | ]	240.0
Gauge Height	m [ | | | . | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain ... P. - 10mm ... Cloud cover ... 100% ... Wind ... 4-7 ...
Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 % Water Odour: Nil

Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other ☐

Algae: On substrate: N ~~R~~ S M E In water column: ~~N~~ ~~L~~ S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: ☒ N ☐ L ☐ S ☐ M ☐ E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R		%	E		%
------------	---	--	--	---	---	-----	---	--	--	---	---	-------------	---	--	--	---	---------	-------	---	---	-------	---

Pool (rocky-K)	[	]	%	Pool (sandy-S)	[	]	%	K		%	S		%	Run		%
----------------	---	---	---	----------------	---	---	---	---	-------	---	---	-------	---	-----	-------	---

Dry [] % Riffle + Run + Pool + Dry = 100% Algae [] % in: R % E %

Edge	[			] %	K..... %	S..... %	Run..... %
------	---	--	--	-----	----------	----------	------------

Blanketing silt [| |] %

COMMENTS:

001111221,123.....

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other *high flow deposits*

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify *fine deposits*

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name B2G - SW 1.11
 Date [14/10/2012] Project Name _____
 Time (24 hrs) [10:00] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |]
 Run Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Party [| |] [| |] [| |] Received [| | | | |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[313 | 17 | 13] 162.6 = ORP (uV)	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[21 | 0 | 1] 0.18 = SA (pH)	[ | | ]	2080.5
pH	[7 | 1 | 1] 2 367.4 = SCP (pH/L)	[ | | ]	2100.5
Dissolved O_2 mg/l	[13 | 15] 0 241.15 = TDS (mg/L)	[ | | ]	2351.5
Turbidity NTU	[13 | 1] 38.7 = %DO	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | 1 | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | 1 | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | 1 | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 1 | ]	[ | | ]	2046.5
Velocity m/s	[ | 1 | ]	[ | | ]	240.0
Gauge Height m	[ | | 1 | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | 1 | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain 1.1 mm Cloud cover 100% Wind 11
 Comments: Fine, hot

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30% Water Odour: 1.1
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: N S M E In water column: N L S M E
 Macrophytes: Emergent: N S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____
 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* ~~Moderate~~ ExtensiveWater colour: Clear Green ~~Opaque~~ *Tannin* OtherSediment deposits: None *Sand* Silt ~~Other~~ *None*Algae: On substrate: None Little *Some* Moderate ExtensiveIn water column: ~~None~~ Little *Some* Moderate ExtensiveWater odour: *No* Yes SpecifySubstrate odour: *No* Yes SpecifyWater surface: Normal *Slick* Scum Foaming Other *Low in places*Variety of habitat: *Shallow* *Deep* *Pool* Run Riffle(circle all types) Undercut bank *LWD* Macrophytes OtherBars: (bed surface protruding from normal water level and forming a bar) *70* %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow

Low

Moderate

High

Flood

(dry/isolated)

(<watermark)

(=watermark)

(>watermark)

RIPARIAN ZONE (to maximum 100 m width)Width of riparian zone: Left bank *10 m* Right bank m* Bare ground None Little *Some* Moderate Extensive* Grass None Little *Some* Moderate Extensive* Shrubs None Little *Some* Moderate Extensive* Trees <10 m high None Little *Some* Moderate Extensive* Trees >10 m high None Little *Some* Moderate ExtensivePresence of exotic riparian species None Little *Some* Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E *no change* Water Ribbon (*Triglochin*) N L S M EDuckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M EHydrilla N L S M E Common Rush (*Juncus*) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M ERibbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

Site Number []	Sample Number []																												
Site Name _____																													
Date [9 10 20 21]	Project Name _____																												
Time (24 hrs) [11 : 15]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted																												
	Received																												

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter		Value							Quality			Variable						
Conductivity	$\mu\text{S/cm}@25^{\circ}\text{C}$	[						]	[			]	2010.5					
Water Temperature	$^{\circ}\text{C}$	[			•			]	[			]	2080.5					
pH		[			•			]	[			]	2100.5					
Dissolved O_2	mg/l	[			•			]	[			]	2351.5					
Turbidity	NTU	[						]	[			]	2030.5					
Air Temperature	$^{\circ}\text{C}$	[			•			]	[			]	2065.5					
Total Alkalinity	mg/l CaCO_3	[				•		]	[			]	2113.5					
Phenol Alkalinity	mg/l CaCO_3	[				•		]	[			]	2114.5					
Transparency (secchi)	m	[			•			]	[			]	2046.5					
Velocity	m/s	[		•				]	[			]	240.0					
Gauge Height	m	[				•		]	[			]	100.0					
Discharge	m^3/s	[					•					]	[			]	140.0	
Discharge Method:	measured ☐	obtained from rating curve ☐							estimated: ☐			no flow ☐		trickle ☐		>0.01 cumecs ☐		

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading: % Water Odour:																		
Water Surface Condition:		Normal		Slick			Scum			Foaming			Other					
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R %	E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K %	S %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R %	E %
Edge [] %		K %	S %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %	Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural 2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae:	On substrate:	None	Little	Some	Moderate	Extensive					
	In water column:	None	Little	Some	Moderate	Extensive					
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)----	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

Site Number [ | | | | | | | ]	Sample Number [ | | | | | | | | | | | | | | | ]
Site Name _____	
Date [/ 19 / 11 01 / 20 12 11]	Project Name _____
Time (24 hrs) [11 : 20]	QHSS Analysis No. [ | | | | | | ]
Project Code [ | | | | | | ]	
Run Code [ | | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY											
Parameter		Value				Quality	Variable				
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$	[2 | 5 | 0 | . | 1 | ]	191.6 = ORP (mV)			[ | | ]	2010.5				
Water Temperature	$^\circ\text{C}$	[1 | 7 | . | 7 | ]	0.14 = SAC (ppt)			[ | | ]	2080.5				
pH		[7 | 7 | . | 5 | ]	291.5 = SCP (mg/L)			[ | | ]	2100.5				
Dissolved O_2	mg/l	[ | 6 | . | 4 | ]	69.2 = 0 0/0 DO			[ | | ]	2351.5				
Turbidity	NTU	[ | | | | ]	190.45 = TDS (mg/L)			[ | ]	2030.5				
Air Temperature	$^\circ\text{C}$	[ | | . | | ]				[ | | ]	2065.5				
Total Alkalinity	mg/l CaCO_3	[ | | | . | ]				[ | | ]	2113.5				
Phenol Alkalinity	mg/l CaCO_3	[ | | | . | ]				[ | | ]	2114.5				
Transparency (secchi)	m	[ | | . | | ]				[ | | ]	2046.5				
Velocity	m/s	[ | . | | ]				[ | | ]	240.0				
Gauge Height	m	[ | | | . | | ]				[ | | ]	100.0				
Discharge	m^3/s}	[ | | | | . | | | ]				[ | | ]	140.0				
Discharge Method:	measured ☐	obtained from rating curve ☐		estimated: ☐		no flow ☐		trickle ☐		☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain *2-16mm* Cloud cover *10%* Wind *W 1*

Comments: *Fog*

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 50 %		Water Odour: nil																
Water Surface Condition: Normal		Slick			Scum			Foaming			Other							
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH: <i>No change</i>																						
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R	 %	E	 %		
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	 %	S	 %	Run	 %
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	 %	E	 %		
Edge	[	|	|	]	%												K	 %	S	 %	Run	 %
Edge is % of habitat available to sample from L and R banks												Blanketing silt [ | | ] %										

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate ExtensiveWater colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow
(dry/isolated)Low
(<watermark)Moderate
(=watermark)High
(>watermark)

Flood

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**Azolla N L S M E Water Ribbon (Triglochin) N L S M EDuckweed N L S M E Water Lettuce (Pistia stratiotes) N L S M EHornwort (*Ceratophyllum*) N L S M E Water Primrose (Ludwigia) N L S M EStoneworts (*Chara* or *Nitella*) N L S M E Sedge (Cyperus) N L S M EHydrilla N L S M E Common Rush (Juncus) N L S M EWater Milfoil (*Myriophyllum*) N L S M E Cumbungi (Typha) N L S M EPondweeds (*Potamogeton*) N L S M E Slender Knotweed (Persicaria) N L S M ERibbonweed (*Vallisneria*) N L S M E N L S M E

..... N L S M E N L S M E

ExoticWater Hyacinth (*Eichhornia*) N L S M E Alligator Weed (Alternanthera) N L S M ESalvinia N L S M E Elodea N L S M EPara Grass (*Urochloa*) N L S M E Egeria N L S M E

..... N L S M E N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name <u>B2G-SW1.18</u>	
Date [ | | / | | / | | ] <u>19/11/2012</u>	Project Name _____
Time (24 hrs) [ | : | : ] <u>11:51</u>	QHSS Analysis No. [ | | | | ]
Project Code [ | | | | ]	
Run Code [ | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[2 | 0 | 1 | 1 | - | 1 | 4] <u>170</u>	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[2 | 0 | . | 1 | 8] <u>0.1 = SAC (ppt)</u>	[ | | ]	2080.5
pH	[7 | . | 1 | 4] <u>224.8 = SRC (ppt)</u>	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 7 | . | 1 | 2] <u>80.4 = 90 DO</u>	[ | | ]	2351.5
Turbidity NTU	[ | | | ] <u>142.4 = TDS (ppt)</u>	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [☒] No [] Comments: _____

Today: Rain 1.7 mm Cloud cover 50% Wind NW

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 % Water Odour: N/A

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals algae N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: no change

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive
Water colour: Clear Green Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank no change m Right bank m

* Bare ground	None	Little	Some	Moderate	Extensive
* Grass	None	Little	Some	Moderate	Extensive
* Shrubs	None	Little	Some	Moderate	Extensive
* Trees <10 m high	None	Little	Some	Moderate	Extensive
* Trees >10 m high	None	Little	Some	Moderate	Extensive
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | | |]
 Site Name _____
 Date [19/11/2012] Project Name _____
 Time (24 hrs) [12:30] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l} [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | | ]		[ | | ]	2030.5
Air Temperature $^\circ\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity $\text{mg}/\text{l CaCO}_3$ [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | | ]		[ | | ]	2046.5
Velocity m/s} [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | | | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural 2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae:	On substrate:	None	Little	Some	Moderate	Extensive					
	In water column:	None	Little	Some	Moderate	Extensive					
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



Site Number []	Sample Number []																												
Site Name _____																													
Date [19/11/2021]	Project Name _____																												
Time (24 hrs) [12:55]	QHSS Analysis No. []																												
Project Code []	Submitted <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []																													
Received _____																													

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY														
Parameter		Value					Quality		Variable					
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$	[	|	|	|	|	]	[	|	|	]	2010.5		
Water Temperature	$^{\circ}\text{C}$	[	|	|	•	|	]	[	|	|	]	2080.5		
pH		[	|	|	•	|	]	[	|	|	]	2100.5		
Dissolved O_2	mg/l}	[	|	|	•	|	]	[	|	|	]	2351.5		
Turbidity	NTU	[	|	|	|	|	]	[	|	|	]	2030.5		
Air Temperature	$^{\circ}\text{C}$	[	|	|	•	|	]	[	|	|	]	2065.5		
Total Alkalinity	$\text{mg}/\text{l CaCO}_3$	[	|	|	|	•	|	]	[	|	|	]	2113.5	
Phenol Alkalinity	$\text{mg}/\text{l CaCO}_3$	[	|	|	|	•	|	]	[	|	|	]	2114.5	
Transparency (secchi)	m	[	|	|	•	|	|	]	[	|	|	]	2046.5	
Velocity	m/s}	[	|	•	|	|	]	[	|	|	]	240.0		
Gauge Height	m	[	|	|	|	•	|	|	]	[	|	|	]	100.0
Discharge	m^3/s}	[	|	|	|	|	•	|	|	|	]	140.0		
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐					estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs							

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: % Water Odour:																		
Water Surface Condition:		Normal			Slick			Scum			Foaming			Other				
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)			S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)							

PERCENT OF HABITAT TYPES IN 100 m REACH:																										
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R	.....	%	E	.....	%				
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	.....	%	S	.....	%	Run	.....	%	
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	.....	%	E	.....	%				
Edge	[	|	|	]	%												K	.....	%	S	.....	%	Run	.....	%	
Edge is % of habitat available to sample from L and R banks												Blanketing silt						[	|	|	]	%				

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
 Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]

Site Name _____

Date [19 / 11 / 2012] Project Name _____

Time (24 hrs) [13 : 25] QHSS Analysis No. [| | | |]

Project Code [| | | |] Submitted [A B C D E F G H I J K L M N]

Run Code [| | | |] Received [| | | |]

Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[21031.18] 154.8 = ORP (ou)	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[21.1] 0.12 = SAC (ppm)	[ | | ]	2080.5
pH	[7.12] 225.4 = PC (mg/l)	[ | | ]	2100.5
Dissolved O_2 mg/l	[5.19] 68.5 = % DO	[ | | ]	2351.5
Turbidity NTU	[ | | ] 160.55 = TDS (mg/l)	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain 10mm Cloud cover 15% Wind 1405

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 30% Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: No up

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

Significant cattle grazing
increased from 2005-2012

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No Change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow *Deep* *Pool* Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

No Change

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	<i>No Change</i> Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WEATHER: Rain in past week: Yes ☒ No ☐ Comments:

Today: Rain 11.0mm Cloud cover 90% Wind breeze
Comments: First flush of year

Shading: 5 % Water Odour: 0.1

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	Run %

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



Site Number []	Sample Number []																												
Site Name _____																													
Date [1 9 / 10 / 20 12 / 1]	Project Name _____																												
Time (24 hrs) [1 4 : 5 5]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY													
Parameter		Value					Quality		Variable				
Conductivity	$\mu\text{S/cm}@25^{\circ}\text{C}$	[	|	|	|	|	]	[	|	|	]	2010.5	
Water Temperature	$^{\circ}\text{C}$	[	|	|	•	|	]	[	|	|	]	2080.5	
pH		[	|	|	•	|	]	[	|	|	]	2100.5	
Dissolved O_2	mg/l	[	|	|	•	|	]	[	|	|	]	2351.5	
Turbidity	NTU	[	|	|	|	|	]	[	|	|	]	2030.5	
Air Temperature	$^{\circ}\text{C}$	[	|	|	•	|	]	[	|	|	]	2065.5	
Total Alkalinity	mg/l CaCO_3	[	|	|	|	•	|	]	[	|	|	]	2113.5
Phenol Alkalinity	mg/l CaCO_3	[	|	|	|	•	|	]	[	|	|	]	2114.5
Transparency (secchi)	m	[	|	|	•	|	|	]	[	|	|	]	2046.5
Velocity	m/s	[	|	•	|	|	]	[	|	|	]	240.0	
Gauge Height	m	[	|	|	|	•	|	]	[	|	|	]	100.0
Discharge	m^3/s}	[	|	|	|	|	•	|	|	|	]	140.0	

Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading:		Water Odour:																				
Water Surface Condition:		Normal					Slick			Scum			Foaming			Other						
Algae:	On substrate:	N	L	S	M	E	In water column:			N	L	S	M	E								
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:			N	L	S	M	E								
	Floating:	N	L	S	M	E																
Impacts:	Human	N	L	S	M	E	Pastoral animals			N	L	S	M	E	Non-pastoral animals			N	L	S	M	E
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)					

PERCENT OF HABITAT TYPES IN 100 m REACH:																									
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R	.....	%	E	.....	%			
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	.....	%	S	.....	%	Run	.....	%
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	.....	%	E	.....	%			
Edge	[	|	|	]	%												K	.....	%	S	.....	%	Run	.....	%
Edge is % of habitat available to sample from L and R banks												Blanketing silt	[	|	|	]	%								

COMMENTS:

.....

.....

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)															
Upstream landuse:															
Adjacent landuse: Left bank: Score Type Right bank: Score Type															
0. Urban/semi-urban, industrial						3. Light grazing, vegetation clearing									
1. Irrigated cropping, intensive forestry or heavy grazing						4. Natural									
2. Non-irrigated cropping, moderate grazing															
Local catchment erosion:		None		Little		Some		Moderate		Extensive					
Water colour:		Clear		Green		Opaque		Tannin		Other					
Sediment deposits:		None		Sand		Silt		Other							
Algae: On substrate:		None		Little		Some		Moderate		Extensive					
In water column:		None		Little		Some		Moderate		Extensive					
Water odour:		No		Yes		Specify									
Substrate odour:		No		Yes		Specify									
Water surface:		Normal		Slick		Scum		Foaming		Other					
Variety of habitat:		Shallow		Deep		Pool		Run		Riffle					
(circle all types)															
Undercut bank						LWD		Macrophytes		Other					
Bars: (bed surface protruding from normal water level and forming a bar) %															
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).															
No flow			Low			Moderate			High			Flood			
(dry/isolated)			(<watermark)			(=watermark)			(>watermark)						
RIPARIAN ZONE (to maximum 100 m width)															
Width of riparian zone:				Left bank m				Right bank m							
* Bare ground				None		Little		Some		Moderate		Extensive			
* Grass				None		Little		Some		Moderate		Extensive			
* Shrubs				None		Little		Some		Moderate		Extensive			
* Trees <10 m high				None		Little		Some		Moderate		Extensive			
* Trees >10 m high				None		Little		Some		Moderate		Extensive			
Presence of exotic riparian species				None		Little		Some		Moderate		Extensive			
Width of continuous tree zone from bank:				Left bank m				Right bank m							
None = 0%			Little = 1-10%			Some = 10-50%			Moderate = 50-75%			Extensive >75%			
												* Can add to >100%			
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:															
Native															
Azolla		N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)		N	L	S	M	E		
Duckweed		N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)		N	L	S	M	E		
Hornwort (<i>Ceratophyllum</i>)		N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)		N	L	S	M	E		
Stoneworts (<i>Chara</i> or <i>Nitella</i>)		N	L	S	M	E	Sedge (<i>Cyperus</i>)		N	L	S	M	E		
Hydrilla		N	L	S	M	E	Common Rush (<i>Juncus</i>)		N	L	S	M	E		
Water Milfoil (<i>Myriophyllum</i>)		N	L	S	M	E	Cumbungi (<i>Typha</i>)		N	L	S	M	E		
Pondweeds (<i>Potamogeton</i>)		N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)		N	L	S	M	E		
Ribbonweed (<i>Vallisneria</i>)		N	L	S	M	E	.....		N	L	S	M	E		
.....		N	L	S	M	E	.....		N	L	S	M	E		
Exotic															
Water Hyacinth (<i>Eichhornia</i>)		N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)		N	L	S	M	E		
Salvinia		N	L	S	M	E	Elodea		N	L	S	M	E		
Para Grass (<i>Urochloa</i>)		N	L	S	M	E	<i>Egeria</i>		N	L	S	M	E		
.....		N	L	S	M	E	.....		N	L	S	M	E		
Comments:															
.....															
N = none				L = 1-10% (little)				S = 10-50% (some)				M = 50-75% (moderate)			
												E = >75% (extensive)			

WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | | | | |]
 Site Name _____
 Date 14/10/2012 Project Name _____
 Time (24 hrs) 15:10 QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted _____
 Run Code [| | | | |] Received _____
 Party [| |] [| |] [| |]

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[ | | | | ]	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2080.5
pH	[ | | . | ]	[ | | ]	2100.5
Dissolved O_2 mg/l	[ | | . | ]	[ | | ]	2351.5
Turbidity NTU	[ | | | ]	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | | ]	[ | | ]	240.0
Gauge Height m	[ | | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | | | . | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: Rain in past week: Yes [] No [] Comments: _____
Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

 (Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural 2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | | | | | | | ]
Site Name _____	
Date [11/11/2012]	Project Name _____
Time (24 hrs) [15:45]	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

A	B	C	D	E	F	G	H	I	J	K	L	M	N

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^{\circ}\text{C}$ [ | | | | ]		[ | | ]	2010.5
Water Temperature $^{\circ}\text{C}$ [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O_2 mg/l [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | | ]		[ | | ]	2030.5
Air Temperature $^{\circ}\text{C}$ [ | | . | ]		[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3 [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m^3/s} [ | | | | . | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____

Today: Rain _____ Cloud cover _____ Wind _____

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



COMMENTS:

(Office use only) Entered into Hydsys / / by _____ Checked on / / by _____
Entered into AQEIS / / by _____ Checked on / / by _____

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial 1. Irrigated cropping, intensive forestry or heavy grazing 2. Non-irrigated cropping, moderate grazing					3. Light grazing, vegetation clearing 4. Natural						
Local catchment erosion: None <u>Little</u> <u>Some</u> Moderate Extensive											
Water colour: Clear Green <u>Opaque</u> Tannin Other											
Sediment deposits: None Sand Silt Other											
Algae: On substrate: <u>None</u> Little Some Moderate Extensive											
In water column: <u>None</u> Little Some Moderate Extensive											
Water odour: <u>No</u> Yes Specify											
Substrate odour: <u>No</u> Yes Specify											
Water surface: Normal Slick Scum Foaming Other											
Variety of habitat: Shallow Deep <u>Pool</u> Run Riffle											
(circle all types) Undercut bank LWD <u>Macrophytes</u> Other											
Bars: (bed surface protruding from normal water level and forming a bar) <u>50</u> % <u>dep zone</u>											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
<u>No flow</u> Low Moderate High Flood											
(dry/isolated) (<watermark) (=watermark) (>watermark)											
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone: Left bank m Right bank m											
* Bare ground None Little <u>Some</u> Moderate Extensive											
* Grass None Little Some Moderate Extensive											
* Shrubs None Little Some Moderate Extensive											
* Trees <10 m high None Little Some Moderate Extensive											
* Trees >10 m high None Little Some Moderate Extensive											
Presence of exotic riparian species None Little Some Moderate Extensive											
Width of continuous tree zone from bank: Left bank m Right bank m											
None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%											
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

Site Number []	Sample Number []																												
Site Name _____																													
Date [20/11/2021]	Project Name _____																												
Time (24 hrs) [06:45]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^{\circ}\text{C}$	[7 5 1 1 0] 208.2 = ORP (mV)	[]	2010.5
Water Temperature $^{\circ}\text{C}$	[1 8 0 3] 0.42 = SAL (ppt)	[]	2080.5
pH	[7 7 7 9] 861 = SCA (mg/L)	[]	2100.5
Dissolved O_2 mg/l	[5 5 5 2] 58.8 = % DO	[]	2351.5
Turbidity NTU	[] 559 = TDS	[]	2030.5
Air Temperature $^{\circ}\text{C}$	[.]	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.]	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain [☒] *11.0 mm* Cloud cover *60%* Wind *W. 1*
Comments:

Shading: 66 %		Water Odour: 11																
Water Surface Condition:		Normal		Slick			Scum			Foaming			Other					
Algae:	On substrate:	N	L	S	M	E	In water column:			N	L	S	M	E				
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:			N	L	S	M	E				
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Some Moderate Extensive
Water colour: Clear Opaque Tannin Other
Sediment deposits: None Sand Silt Other
Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive
Water odour: No Yes Specify
Substrate odour: No Yes Specify Organics / wildlife feeding
Water surface: Normal Slick Scum Foaming Other
Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | | | | | | | | |]

Site Name _____

Date [2011/02/01] Project Name _____

Time (24 hrs) [07:30] QHSS Analysis No. [| | | | |]

Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]

Run Code [| | | | |] Received [| | | | |]

Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[613.4 - 10] 208.5 = ORP (mV)	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[16.3] 0.37 = SAC (ppm)	[ | | ]	2080.5
pH	[8.13] 759.0 = SCP (mV)	[ | | ]	2100.5
Dissolved O_2 mg/l	[8.13] 85.4 = % DO	[ | | ]	2351.5
Turbidity NTU	[ | | ] 494 = TDS (mg/l)	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | . | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain +10mm Cloud cover 50% Wind Nil

Comments: F.v.

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 40% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: No change

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____

Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla N L S M E Water Ribbon (*Triglochin*) N L S M E

Duckweed N L S M E Water Lettuce (*Pistia stratiotes*) N L S M E

Hornwort (*Ceratophyllum*) N L S M E Water Primrose (*Ludwigia*) N L S M E

Stoneworts (*Chara* or *Nitella*) N L S M E Sedge (*Cyperus*) N L S M E

Hydrilla N L S M E Common Rush (*Juncus*) N L S M E

Water Milfoil (*Myriophyllum*) N L S M E Cumbungi (*Typha*) N L S M E

Pondweeds (*Potamogeton*) N L S M E Slender Knotweed (*Persicaria*) N L S M E

Ribbonweed (*Vallisneria*) N L S M E

..... N L S M E

Exotic

Water Hyacinth (*Eichhornia*) N L S M E Alligator Weed (*Alternanthera*) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (*Urochloa*) N L S M E *Egeria* N L S M E

..... N L S M E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



Site Number [][][][][][][][]	Sample Number [][][][][][][][][][][][][][][][][][]
Site Name _____	
Date [20/10/2021]	Project Name _____
Time (24 hrs) [08:20]	QHSS Analysis No. [][][][][][][]
Project Code [][][][][][][][]	
Run Code [][][][][][][][]	Submitted
Party [][][] [][][] [][][]	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm@25}^\circ\text{C}$	[785 10] 206.0 = ORP (dwt)	[]	2010.5
Water Temperature $^\circ\text{C}$	[18 16] 0.44 = SLR (ppt)	[]	2080.5
pH	[8 12] 9 895.0 = SCP (mg/L)	[]	2100.5
Dissolved O_2 mg/l	[17 16] 3 81.9 = % DO	[]	2351.5
Turbidity NTU	[] 578.5 = TDS (mg/L)	[]	2030.5
Air Temperature $^\circ\text{C}$	[.]	[]	2065.5
Total Alkalinity mg/l CaCO_3	[.]	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[.]	[]	2114.5
Transparency (secchi) m	[.]	[]	2046.5
Velocity m/s	[.]	[]	240.0
Gauge Height m	[.]	[]	100.0
Discharge m^3/s	[.]	[]	140.0

Discharge Method:
measured (gauged) ☐
obtained from rating curve ☐
estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments:

Today: Rain *11 mm* Cloud cover *0%* Wind

Comments:

Shading: 50 %		Water Odour: Nil											
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other			
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E	
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E	
	Floating:	N	L	S	M	E							
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)					

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R	 %	E	 %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K	 %	S	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R	 %	E	 %
Edge	[] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks							Run	 %
				Blanketing silt	[] %			

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some ~~Moderate~~ Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other *high flow*

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) *20* %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
 No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *no change*

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						Exotic					
Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003 *AE* Magistrate River Upstream



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | | ]	Sample Number [ | | | | | | | | | | | | | | | ]
Site Name _____	
Date [17 / 11 / 2021]	Project Name _____
Time (24 hrs) [03:20] 1520	QHSS Analysis No. [ | | | | | ]
Project Code [ | | | | | ]	
Run Code [ | | | | | ]	Submitted
Party [ | | ] [ | | ] [ | | ]	Received

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ [1 | 8 | 6 | . | 8] C 176.6	[ | | ]	2010.5
Water Temperature	$^{\circ}\text{C}$ [2 | 2 | . | 2] TDS 121.55	[ | | ]	2080.5
pH	[ | 6 | . | 69] SAL 0.09	[ | | ]	2100.5
Dissolved O_2	mg/l} [ | 6 | . | 10] DO% 70.2	[ | | ]	2351.5
Turbidity	NTU [ | | | | ] ORP 223.9	[ | | ]	2030.5
Air Temperature	$^{\circ}\text{C}$ [ | | . | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | . | ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | . | | ]	[ | | ]	2046.5
Velocity	m/s} [ | . | | ]	[ | | ]	240.0
Gauge Height	m [ | | | . | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | . | | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments: *Humid*
Today: Rain *+10* Cloud cover *10* Wind *16!*
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 % Water Odour: Nil

Water Surface Condition: ☒ Normal ☐ Slick ☐ Scum ☐ Foaming ☐ Other *algae 3/100*

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: (N) L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[]	[]	[]	%	Run	[]	[]	[]	%	Macrophytes	[]	[]	[]	% in: R	 %	E	 %
------------	-----	-----	-----	---	-----	-----	-----	-----	---	-------------	-----	-----	-----	---------	---------	---	---------

Pool (rocky-K)	[]	[]	[]	[]	%	Pool (sandy-S)	[]	[]	[]	[]	%	K		%	S		%	Run		%
----------------	-----	-----	-----	-----	---	----------------	-----	-----	-----	-----	---	---	-------	---	---	-------	---	-----	-------	---

Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae	[ | | ] % in: R % E %
-----	-----------------	----------------------------------	-------	--

Edge	[ | | ] %	K..... %	S..... %	Run..... %
------	-----------	----------	----------	------------

Blanketing silt [| |] %

COMMENTS:

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by

Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla N L S M E Water Ribbon (Triglochin) N L S M E

Duckweed N L S M E Water Lettuce (Pistia stratiotes) N L S M E

Hornwort (Ceratophyllum) N L S M E Water Primrose (Ludwigia) N L S M E

Stoneworts (Chara or Nitella) N L S M E Sedge (Cyperus) N L S M E

Hydrilla N L S M E Common Rush (Juncus) N L S M E

Water Milfoil (Myriophyllum) N L S M E Cumbungi (Typha) N L S M E

Pondweeds (Potamogeton) N L S M E Slender Knotweed (Persicaria) N L S M E

Ribbonweed (Vallisneria) N L S M E

N L S M E

Exotic

Water Hyacinth (Eichhornia) N L S M E Alligator Weed (Alternanthera) N L S M E

Salvinia N L S M E Elodea N L S M E

Para Grass (Urochloa) N L S M E Egeria N L S M E

N L S M E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

Site Number	[][][][][][][][]	Sample Number	[][][][][][][][][][][][][][][][][][]																												
Site Name																															
Date	[17/11/2021]	Project Name																													
Time (24 hrs)	[16:00]	QHSS Analysis No.	[][][][][][][]																												
Project Code	[][][][][][][][]	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[][][][][][][][]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[][][] [][][] [][][]																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY									
Parameter		Value				Quality		Variable	
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$	[196.3]	C	186.5	[ | | ]		2010.5		
Water Temperature	$^\circ\text{C}$	[22.3]	SAL	0.09	[ | | ]		2080.5		
pH		[6.68]	TDS	127.40	[ | | ]		2100.5		
Dissolved O_2	mg/l	[5.72]	DO%	67.6	[ | | ]		2351.5		
Turbidity	NTU	[ | | | ]	ORP	224.5	[ | | ]		2030.5		
Air Temperature	$^\circ\text{C}$	[ | | . | ]			[ | | ]		2065.5		
Total Alkalinity	mg/l CaCO_3	[ | | | . | ]			[ | | ]		2113.5		
Phenol Alkalinity	mg/l CaCO_3	[ | | | . | ]			[ | | ]		2114.5		
Transparency (secchi)	m	[ | | . | | ]			[ | | ]		2046.5		
Velocity	m/s	[ | . | | ]			[ | | ]		240.0		
Gauge Height	m	[ | | | . | | ]			[ | | ]		100.0		
Discharge	m^3/s}	[ | | | | . | | | | ]			[ | | ]		140.0		
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐		estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs					

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: *Hard*
Today: Rain *from* Cloud cover *20%* Wind *W*
 Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 15 %		Water Odour: (N)										
Water Surface Condition: Normal		Slick		Scum		Foaming		Other				
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E
	Floating:	N	L	S	M	E						
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E
							Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)				

PERCENT OF HABITAT TYPES IN 100 m REACH:																									
Riffle (R)	[	|	|	]	%	Run	[	|	|	]	%	Macrophytes	[	|	|	]	% in: R	.....	%	E	.....	%			
Pool (rocky-K)	[	|	|	]	%	Pool (sandy-S)	[	|	|	]	%						K	.....	%	S	.....	%	Run	.....	%
Dry	[	|	|	]	%	Riffle + Run + Pool + Dry = 100%						Algae	[	|	|	]	% in: R	.....	%	E	.....	%			
Edge	[	|	|	]	%												K	.....	%	S	.....	%	Run	.....	%
Edge is % of habitat available to sample from L and R banks												Blanketing silt [] %													

COMMENTS:

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other *fluvial deposits*

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other *shrub-fluvial*

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

*** Bare ground** None Little Some Moderate Extensive

*** Grass** None Little Some Moderate Extensive

*** Shrubs** None Little Some Moderate Extensive

*** Trees <10 m high** None Little Some Moderate Extensive

*** Trees >10 m high** None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

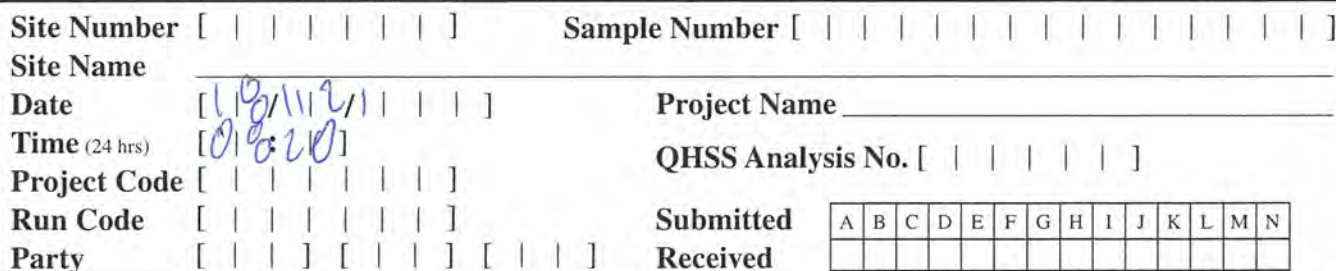
Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter		Value	Quality	Variable
Conductivity	$\mu\text{S/cm}$ @ 25°C	SPK [2 29 0 8] C 213.9	[]	2010.5
Water Temperature	°C	[2 1 1 4] SAL 0.11	[]	2080.5
pH		[7 1 1] ORP 163.9	[]	2100.5
Dissolved O ₂	mg/l	[6 7 4] TDS 149.50	[]	2351.5
Turbidity	NTU	[] DO ₀₆ 76.3	[]	2030.5
Air Temperature	°C	[0]	[]	2065.5
Total Alkalinity	mg/l CaCO ₃	[0]	[]	2113.5
Phenol Alkalinity	mg/l CaCO ₃	[0]	[]	2114.5
Transparency (secchi)	m	[0]	[]	2046.5
Velocity	m/s	[0]	[]	240.0
Gauge Height	m	[0]	[]	100.0
Discharge	m ³ /s	[0]	[]	140.0
Discharge Method:	measured (gauged) ☐	obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain [☒] Cloud cover [60] Wind []
Comments:

Shading: 30 %		Water Odour: NH																									
Water Surface Condition:		Normal					Slick					Scum					Foaming					Other					
Algae:	On substrate:	N	L	S	M	E											In water column:	N	L	S	M	E					
Macrophytes:	Emergent:	N	L	S	M	E											Submerged:	N	L	S	M	E					
	Floating:	N	L	S	M	E																					
Impacts:	Human	N	L	S	M	E	Pastoral animals					N	L	S	M	E	Non-pastoral animals					N	L	S	M	E	
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)										

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	Run %

COMMENTS:

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Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* *Some* Moderate Extensive

Water colour: *Clear* Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other *silt - flood*

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other *flood debris*

Variety of habitat: *Shallow* *Deep* *Poel* *Run* Riffle
(circle all types) *Undercut bank* *LWD* *Macrophytes* Other

Bars: (bed surface protruding from normal water level and forming a bar) % *flooded*

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *no change*

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

0740
PH4 = 4.00
7:7-10
10:10:00

56
 1413ms
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 2500
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 1232ms
 1-4000

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Blanketing silt [| |] %

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REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No Change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other *flood deposit*

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other *debris*

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m *No Change*

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native *No Change*

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Site Number []	Sample Number []
Site Name _____	
Date [17 / 11 / 2021]	Project Name _____
Time (24 hrs) [12 : 20]	QHSS Analysis No. []
Project Code []	
Run Code []	Submitted
Party [] [] []	Received

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ [2 1 5 . 3] SPC 230.1 μS	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [2 1 . 6] SAL 0.11 ppt	[]	2080.5
pH	[6 . 9 3] DO% 70.7	[]	2100.5
Dissolved O_2	mg/l [6 . 2] TDS 149.50 mg/l	[]	2351.5
Turbidity	NTU [] ORP 223.5 mV	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ [.]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [.]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [.]	[]	2114.5
Transparency (secchi)	m [.]	[]	2046.5
Velocity	m/s [.]	[]	240.0
Gauge Height	m [.]	[]	100.0
Discharge	m^3/s [.]	[]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *+120mm* Cloud cover *70%* Wind *all*
Comments:

Shading: 20 %		Water Odour: 0.1											
Water Surface Condition:		Normal		Slick		Scum		Foaming		Other			
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E
	Floating:	N	L	S	M	E							
Impacts:	Human	N	L	S	M	E	Pastoral animals		N	L	S	M	E
							Non-pastoral animals		N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)					

Riffle (R)	[] %	Run	[] %	Macrophytes	[] %	in: R	 %	E	 %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %			K	 %	S	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] %	in: R	 %	E	 %
Edge	[] %					K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %			Run	 %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	Project Name _____
Date [18/11/2021]	QHSS Analysis No. [ | | | | | ]
Time (24 hrs) [09:25]	Submitted [ | | | | | ]
Project Code [ | | | | | ]	Received [ | | | | | ]
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm}@25^\circ\text{C}$	[160.2] C 143.4	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[20.1] SDS 104.65	[ | | ]	2080.5
pH	[6.77] SAZ 0.08	[ | | ]	2100.5
Dissolved O_2 mg/l	[14.60] ORP 169.1	[ | | ]	2351.5
Turbidity NTU	[ | | ] D% 50.7	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: _____

Today: Rain ☒ Cloud cover 70% Wind breeze

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 60% Water Odour: Nil

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: no change

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *No change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
 1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
 2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
 In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
 (circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
 No flow Low Moderate High Flood
 (dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive
 * Grass None Little Some Moderate Extensive
 * Shrubs None Little Some Moderate Extensive
 * Trees <10 m high None Little Some Moderate Extensive
 * Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native *No change*

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}$ @ 25°C []	[]	2010.5
Water Temperature	°C []	[]	2080.5
pH	[]	[]	2100.5
Dissolved O ₂	mg/l []	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	°C []	[]	2065.5
Total Alkalinity	mg/l CaCO ₃ []	[]	2113.5
Phenol Alkalinity	mg/l CaCO ₃ []	[]	2114.5
Transparency (secchi)	m []	[]	2046.5
Velocity	m/s []	[]	240.0
Gauge Height	m []	[]	100.0
Discharge	m ³ /s []	[]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading:		% Water Odour:																								
Water Surface Condition:		Normal					Slick					Scum					Foaming					Other				
Algae:	On substrate:	N	L	S	M	E						In water column:	N	L	S	M	E									
Macrophytes:	Emergent:	N	L	S	M	E						Submerged:	N	L	S	M	E									
	Floating:						N	L	S	M	E															
Impacts:	Human	N	L	S	M	E	Pastoral animals					N	L	S	M	E	Non-pastoral animals					N	L	S	M	E
N = none		L = 1-10% (little)					S = 10-50% (some)					M = 50-75% (moderate)					E = >75% (extensive)									

Riffle (R)	[] %	Run	[] %	Macrophytes [] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %	K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae [] % in: R %	E %
Edge	[] %			K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt [] %	Run %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m				Right bank m					
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m				Right bank m					
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											

WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]

Site Name _____

Date [18 / 11 / 2021] Project Name _____

Time (24 hrs) [10:40] QHSS Analysis No. [| | | |]

Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]

Run Code [| | | | |] Received [| | | | |]

Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ } 25^\circ\text{C}$	[115 | 4 | 0] 147.9 ^{SAL}	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[23 | 0] ORP 187.2	[ | | ]	2080.5
pH	[6 | 9] SAL 0.07	[ | | ]	2100.5
Dissolved O_2 mg/l	[6 | 2] DO% 72.4	[ | | ]	2351.5
Turbidity NTU	[ | | ] TD5 100.10	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain [7] Cloud cover [20%] Wind [breeze]

Comments: [fine]

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: [30] % Water Odour: [Nil]

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: [N] L S M E In water column: [N] L S M E

Macrophytes: Emergent: [N] L S M E Submerged: [N] L S M E

Floating: [N] L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: [No change]

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R [] % E [] %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K [] % S [] % Run [] %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R [] % E [] %
Edge [ | | ] %		K [] % S [] % Run [] %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys [/ /] by _____ Checked on [/ /] by _____

Entered into AQEIS [/ /] by _____ Checked on [/ /] by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *no change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank *no change* m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm@25}^\circ\text{C}$ [1 8 7] 179.3	[]	2010.5
Water Temperature	$^\circ\text{C}$ [2 2 0] 22.0	[]	2080.5
pH	[6 0 0] 6.0	[]	2100.5
Dissolved O_2	mg/l [16 0 0] 16.0	[]	2351.5
Turbidity	NTU [] 0.0	[]	2030.5
Air Temperature	$^\circ\text{C}$ []	[]	2065.5
Total Alkalinity	mg/l CaCO_3 []	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 []	[]	2114.5
Transparency (secchi)	m []	[]	2046.5
Velocity	m/s []	[]	240.0
Gauge Height	m []	[]	100.0
Discharge	m^3/s []	[]	140.0
Discharge Method: ☐ measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments: *7th Cast*
Today: Rain ☒ Cloud cover *60%* Wind *brake*
 Comments: _____

Shading: 30 %		Water Odour: Nil	
Water Surface Condition: Normal		Slick	
Algae: On substrate:		Scum	
Macrophytes: Emergent:		Foaming	
Floating:		Other debris	
Impacts: Human		Pastoral animals	
Non-pastoral animals			
N = none		L = 1-10% (little)	
S = 10-50% (some)		M = 50-75% (moderate)	
E = >75% (extensive)			

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (Triglochin)					
Duckweed						Water Lettuce (Pistia stratiotes)					
Hornwort (Ceratophyllum)						Water Primrose (Ludwigia)					
Stoneworts (Chara or Nitella)						Sedge (Cyperus)					
Hydrilla						Common Rush (Juncus)					
Water Milfoil (Myriophyllum)						Cumbungi (Typha)					
Pondweeds (Potamogeton)						Slender Knotweed (Persicaria)					
Ribbonweed (Vallisneria)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (Eichhornia)						Alligator Weed (Alternanthera)					
Salvinia						Elodea					
Para Grass (Urochloa)						Egeria					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ []	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [•]	[]	2080.5
pH	[•]	[]	2100.5
Dissolved O_2	mg/l [•]	[]	2351.5
Turbidity	NTU []	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ [•]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [•]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [•]	[]	2114.5
Transparency (secchi)	m [•]	[]	2046.5
Velocity	m/s [•]	[]	240.0
Gauge Height	m [•]	[]	100.0
Discharge	m^3/s [•]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [] No [] Comments:

Today: Rain Cloud cover Wind

Comments:

Shading: % Water Odour:

Water Surface Condition: Normal Slick Scum Foaming Other

Algae: On substrate: N L S M E In water column: N L S M E

Macrophytes: Emergent: N L S M E Submerged: N L S M E

Floating: N L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R %	E %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K %	S %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R %	E %
Edge	[] %				K %	S %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %	Run %

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)											
Upstream landuse:											
Adjacent landuse: Left bank: Score Type Right bank: Score Type											
0. Urban/semi-urban, industrial					3. Light grazing, vegetation clearing						
1. Irrigated cropping, intensive forestry or heavy grazing					4. Natural						
2. Non-irrigated cropping, moderate grazing											
Local catchment erosion:	None	Little	Some	Moderate	Extensive						
Water colour:	Clear	Green	Opaque	Tannin	Other						
Sediment deposits:	None	Sand	Silt	Other							
Algae: On substrate:	None	Little	Some	Moderate	Extensive						
In water column:	None	Little	Some	Moderate	Extensive						
Water odour:	No	Yes	Specify								
Substrate odour:	No	Yes	Specify								
Water surface:	Normal	Slick	Scum	Foaming	Other						
Variety of habitat:	Shallow	Deep	Pool	Run	Riffle						
(circle all types)	Undercut bank		LWD	Macrophytes	Other						
Bars: (bed surface protruding from normal water level and forming a bar) %											
Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).											
	No flow	Low	Moderate	High	Flood						
	(dry/isolated)	(<watermark)	(=watermark)	(>watermark)							
RIPARIAN ZONE (to maximum 100 m width)											
Width of riparian zone:		Left bank m			Right bank m						
* Bare ground	None	Little	Some	Moderate	Extensive						
* Grass	None	Little	Some	Moderate	Extensive						
* Shrubs	None	Little	Some	Moderate	Extensive						
* Trees <10 m high	None	Little	Some	Moderate	Extensive						
* Trees >10 m high	None	Little	Some	Moderate	Extensive						
Presence of exotic riparian species	None	Little	Some	Moderate	Extensive						
Width of continuous tree zone from bank:		Left bank m			Right bank m						
None = 0%		Little = 1-10%		Some = 10-50%		Moderate = 50-75%		Extensive >75%		* Can add to >100%	
MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:											
Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E		N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E		N	L	S	M	E
Comments:											
.....											
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)											



SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$ [211016] C194.3	[]	2010.5
Water Temperature	$^\circ\text{C}$ [210116] ORP 195.3	[]	2080.5
pH	[17181] SAL 0.10	[]	2100.5
Dissolved O_2	mg/l [18137] DO% 92.6	[]	2351.5
Turbidity	NTU [] TDS 137.80	[]	2030.5
Air Temperature	$^\circ\text{C}$ [.]	[]	2065.5
Total Alkalinity	mg/l CaCO_3 [.]	[]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [.]	[]	2114.5
Transparency (secchi)	m [.]	[]	2046.5
Velocity	m/s [.]	[]	240.0
Gauge Height	m [.]	[]	100.0
Discharge	m^3/s [.]	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

WEATHER: *Rain in past week:* Yes ☒ No ☐ Comments: *O'Last*
Today: Rain ☒ Cloud cover *100* Wind *Ni'*
 Comments: _____

Shading: 10 %		Water Odour: Nil																
Water Surface Condition: Normal		Slick																
		Scum																
		Foaming																
		Other																
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

Riffle (R)	[] %	Run	[] %	Macrophytes	[] % in: R	 %	E	 %
Pool (rocky-K)	[] %	Pool (sandy-S)	[] %		K	 %	S	 %
Dry	[] %	Riffle + Run + Pool + Dry = 100%		Algae	[] % in: R	 %	E	 %
Edge	[] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[] %		Run	 %

(Office use only) Entered into Hydsys / / by Checked on / / by
 Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native											
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]

Site Name _____

Date [18/11/2021] Project Name _____

Time (24 hrs) [13:10] QHSS Analysis No. [| | | |]

Project Code [| | | |] Submitted [A B C D E F G H I J K L M N]

Run Code [| | | |] Received [| | | |]

Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C	[198.5] <i>SPC</i> <i>< 202.1</i>	[ | | ]	2010.5
Water Temperature °C	[26.1] <i>TDS 129.35</i>	[ | | ]	2080.5
pH	[6.85] <i>SAL 0.09</i>	[ | | ]	2100.5
Dissolved O ₂ mg/l	[3.51] <i>DO% 43.4</i>	[ | | ]	2351.5
Turbidity NTU	[ | | ] <i>ORP 179.7</i>	[ | | ]	2030.5
Air Temperature °C	[ | . | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃	[ | | . | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃	[ | | . | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | . | ]	[ | | ]	2046.5
Velocity m/s	[ | . | ]	[ | | ]	240.0
Gauge Height m	[ | | . | ]	[ | | ]	100.0
Discharge m ³ /s	[ | | | . | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes [X] No [] Comments: _____

Today: Rain ... *Current 1mm* ... Cloud cover ... *100%* ... Wind ... *W* ...

Comments: ... *Raining* ...

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: ... *10* ... % Water Odour: _____

Water Surface Condition: Normal Slick Scum Foaming Other _____

Algae: On substrate: N L S M E In water column: *N* L S M E

Macrophytes: Emergent: N L S M E Submerged: *N* L S M E

Floating: *N* L S M E *Acolla*

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: *no change*

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %

Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %

Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %

Edge [| |] % K % S % Run %

Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify *Cattle pugging*

Water surface: Normal Slick Scum Foaming Other *covered in debris*

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native *no change*

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S}/\text{cm}@25^{\circ}\text{C}$ [2 8 0 . 4 C 265.5]	[]	2010.5
Water Temperature	$^{\circ}\text{C}$ [2 2 . 2 TDS 182.00]	[]	2080.5
pH	[7 . 53 SAL 0.13]	[]	2100.5
Dissolved O_2	mg/l [6 . 68 DO% 76.8]	[]	2351.5
Turbidity	NTU [] ORP 138.6	[]	2030.5
Air Temperature	$^{\circ}\text{C}$ []	[]	2065.5
Total Alkalinity	$\text{mg}/\text{l CaCO}_3$ []	[]	2113.5
Phenol Alkalinity	$\text{mg}/\text{l CaCO}_3$ []	[]	2114.5
Transparency (secchi)	m []	[]	2046.5
Velocity	m/s []	[]	240.0
Gauge Height	m []	[]	100.0
Discharge	m^3/s []	[]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐	estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs	

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

COMMENTS

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AOEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type *no change* Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: *Clear* Green *Opaque* Tannin Other

Sediment deposits: None Sand *Silt* Other *high flow*

Algae: On substrate: *None* Little Some Moderate Extensive
In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify *originals from upstream*

Water surface: *Normal* Slick Scum Foaming Other

Variety of habitat: *Shallow* *Deep* *Pool* *Run* Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) *60* %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate *High* Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m *no change* Right bank m

	None	Little	Some	Moderate	Extensive
* Bare ground					
* Grass					
* Shrubs					
* Trees <10 m high					
* Trees >10 m high					
Presence of exotic riparian species					

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						<i>no change</i>					
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____																													
Date [18/11/2012]	Project Name _____																												
Time (24 hrs) [14:15]	QHSS Analysis No. []																												
Project Code []	Submitted																												
Run Code []	Received																												
Party [] [] []	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}$ @ 25°C [ | | | | ]		[ | | ]	2010.5
Water Temperature °C [ | | . | ]		[ | | ]	2080.5
pH [ | | . | ]		[ | | ]	2100.5
Dissolved O ₂ mg/l [ | | . | ]		[ | | ]	2351.5
Turbidity NTU [ | | | | ]		[ | | ]	2030.5
Air Temperature °C [ | | . | ]		[ | | ]	2065.5
Total Alkalinity mg/l CaCO ₃ [ | | | . | ]		[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO ₃ [ | | | . | ]		[ | | ]	2114.5
Transparency (secchi) m [ | | . | ]		[ | | ]	2046.5
Velocity m/s [ | . | | ]		[ | | ]	240.0
Gauge Height m [ | | | . | ]		[ | | ]	100.0
Discharge m ³ /s [ | | | | . | | | ]		[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [] No [] Comments: _____
 Today: Rain _____ Cloud cover _____ Wind _____
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: _____ % Water Odour: _____
 Water Surface Condition: Normal Slick Scum Foaming Other _____
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS: _____

(Office use only) Entered into Hydsys ____/____/____ by _____ Checked on ____/____/____ by _____
 Entered into AQEIS ____/____/____ by _____ Checked on ____/____/____ by _____

REACH OBSERVATIONS

(of 100 m stream length)

Upstream landuse:

Adjacent landuse:

Left bank: Score

Type

Right bank: Score

Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion:

Water colour:

Sediment deposits:

Algae:

Water odour:

Substrate odour:

Water surface:

Variety of habitat:

None

Little

Some

Moderate

Extensive

Clear

Green

Opaque

Tannin

Other

None

Sand

Silt

Other

On substrate:

None

Little

Some

Moderate

Extensive

In water column:

None

Little

Some

Moderate

Extensive

No

Yes

Specify

No

Yes

Specify

Normal

Slick

Scum

Foaming

Other

Shallow

Deep

Pool

Run

Riffle

(circle all types)

Undercut bank

LWD

Macrophytes

Other

Bars:

Flow level:

(bed surface protruding from normal water level and forming a bar)

(relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow

Low

Moderate

High

Flood

(dry/isolated)

(<watermark)

(=watermark)

(>watermark)

RIPARIAN ZONE

(to maximum 100 m width)

Width of riparian zone:

* Bare ground

* Grass

* Shrubs

* Trees <10 m high

* Trees >10 m high

Presence of exotic riparian species

Width of continuous tree zone from bank:

None

Little

Some

Moderate

Extensive

Left bank

Right bank

None = 0%

Little = 1-10%

Some = 10-50%

Moderate = 50-75%

Extensive >75%

* Can add to >100%

MACROPHYTES

Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla

Duckweed

Hornwort (Ceratophyllum)

Stoneworts (Chara or Nitella)

Hydrilla

Water Milfoil (Myriophyllum)

Pondweeds (Potamogeton)

Ribbonweed (Vallisneria)

N

L

S

M

E

Water Ribbon (Triglochin)

N

L

S

M

E

Water Lettuce (Pistia stratiotes)

N

L

S

M

E

Water Primrose (Ludwigia)

N

L

S

M

E

Sedge (Cyperus)

N

L

S

M

E

Common Rush (Juncus)

N

L

S

M

E

Cumbungi (Typha)

N

L

S

M

E

Slender Knotweed (Persicaria)

N

L

S

M

E

N

L

S

M

E

N

L

S

M

E

Exotic

Water Hyacinth (Eichhornia)

Salvinia

Para Grass (Urochloa)

N

L

S

M

E

Alligator Weed (Alternanthera)

N

L

S

M

E

Elodea

N

L

S

M

E

Egeria

N

L

S

M

E

N

L

S

M

E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[][][][][][][][]	Sample Number	[][][][][][][][][][][][][][][][][][][]																												
Site Name																															
Date	[8 / 11 / 2012]	Project Name	624 2.30																												
Time (24 hrs)	[15 : 15]	QHSS Analysis No.	[][][][][][][]																												
Project Code	[][][][][][][]	Submitted	<table border="1"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A	B	C	D	E	F	G	H	I	J	K	L	M	N																		
Run Code	[][][][][][][]	Received	<table border="1"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table>																												
Party	[][][] [][][] [][][]																														

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity	$\mu\text{S/cm @ } 25^\circ\text{C}$ [2 | 73 | - | 9] C 266.3	[ | | ]	2101.5
Water Temperature	$^\circ\text{C}$ [2 | 31 | - | 16] ORP 165.2	[ | | ]	2080.5
pH	[ | 71 | - | 46] SAL 0.13	[ | | ]	2100.5
Dissolved O_2	mg/l [ | 71 | - | 03] DO% 82.9	[ | | ]	2351.5
Turbidity	NTU [ | | | ] TDS 178.10	[ | | ]	2030.5
Air Temperature	$^\circ\text{C}$ [ | | - | ]	[ | | ]	2065.5
Total Alkalinity	mg/l CaCO_3 [ | | | - | ]	[ | | ]	2113.5
Phenol Alkalinity	mg/l CaCO_3 [ | | | - | ]	[ | | ]	2114.5
Transparency (secchi)	m [ | | - | | ]	[ | | ]	2046.5
Velocity	m/s [ | - | | ]	[ | | ]	240.0
Gauge Height	m [ | | | - | | ]	[ | | ]	100.0
Discharge	m^3/s} [ | | | | - | | | ]	[ | | ]	140.0
Discharge Method:	measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments:

Today: Rain *recent (5mm)* Cloud cover *59%* Wind *N₂*

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 10 %		Water Odour: 2.7																
Water Surface Condition: Normal		Slick		Scum			Foaming			Other								
Algae:	On substrate:	N	L	S	M	E	In water column:		N	L	S	M	E					
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:		N	L	S	M	E					
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)			M = 50-75% (moderate)			E = >75% (extensive)								

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] %	in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %			K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] %	in: R	 %	E	 %
Edge	[ | | ] %					K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %			Run	 %

COMMENTS: _____

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^{\circ}\text{C}$	[2 8 2 0 4] C 256.2	[]	2010.5
Water Temperature $^{\circ}\text{C}$	[22 0] TDS 183.30	[]	2080.5
pH	[7 0] SAL 0.13	[]	2100.5
Dissolved O_2 mg/l	[6 0] DO% 69.5	[]	2351.5
Turbidity NTU	[] ORP 157.1	[]	2030.5
Air Temperature $^{\circ}\text{C}$	[0]	[]	2065.5
Total Alkalinity mg/l CaCO_3	[0]	[]	2113.5
Phenol Alkalinity mg/l CaCO_3	[0]	[]	2114.5
Transparency (secchi) m	[0]	[]	2046.5
Velocity m/s	[0]	[]	240.0
Gauge Height m	[0]	[]	100.0
Discharge m^3/s	[0]	[]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: *Rain in past week:* Yes [X] No [] Comments:
Today: Rain [X] *& 15 mm* Cloud cover *0%* Wind *breeze*
 Comments:

Shading: <u>60</u> %		Water Odour: <u>M</u>																			
Water Surface Condition:		Normal				Slick				Scum				Foaming				Other			
Algae:	On substrate:	N	<u>L</u>	S	M	E	In water column:				<u>N</u>	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	<u>M</u>	E	Submerged:				<u>N</u>	L	S	M	E						
	Floating:	<u>N</u>	L	S	M	E															
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E			
N = none		L = 1-10% (little)				S = 10-50% (some)				<u>M = 50-75% (moderate)</u>				E = >75% (extensive)							

Riffle (R) [] %	Run [] %	Macrophytes [] % in: R % E %
Pool (rocky-K) [] %	Pool (sandy-S) [] %	K % S % Run %
Dry [] %	Riffle + Run + Pool + Dry = 100%	Algae [] % in: R % E %
Edge [] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [] %

(Office use only) Entered into Hydsys _____ by _____ Checked on ____ / ____ / ____ by _____
Entered into AQEIS ____ / ____ / ____ by _____ Checked on ____ / ____ / ____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial

3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing

4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive

In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle

(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:**Native**

	N	L	S	M	E		N	L	S	M	E
Azolla						Water Ribbon (<i>Triglochin</i>)					
Duckweed						Water Lettuce (<i>Pistia stratiotes</i>)					
Hornwort (<i>Ceratophyllum</i>)						Water Primrose (<i>Ludwigia</i>)					
Stoneworts (<i>Chara</i> or <i>Nitella</i>)						Sedge (<i>Cyperus</i>)					
Hydrilla						Common Rush (<i>Juncus</i>)					
Water Milfoil (<i>Myriophyllum</i>)						Cumbungi (<i>Typha</i>)					
Pondweeds (<i>Potamogeton</i>)						Slender Knotweed (<i>Persicaria</i>)					
Ribbonweed (<i>Vallisneria</i>)											
.....											

Exotic

	N	L	S	M	E		N	L	S	M	E
Water Hyacinth (<i>Eichhornia</i>)						Alligator Weed (<i>Alternanthera</i>)					
Salvinia						Elodea					
Para Grass (<i>Urochloa</i>)						<i>Egeria</i>					
.....											

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [| | | | |] Sample Number [| | | | |]
 Site Name _____
 Date [18/11/2011] Project Name _____
 Time (24 hrs) [16:00] QHSS Analysis No. [| | | | |]
 Project Code [| | | | |] Submitted [A B C D E F G H I J K L M N]
 Run Code [| | | | |] Received [| | | | |]
 Party [| |] [| |] [| |]

SAMPLING LOCATION: Latitude _____ Longitude _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[218 | 01.5] SIC 265.3	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[21.2 | 19] TDS 182.65	[ | | ]	2080.5
pH	[7.1 | 4.1] SAL 0.13	[ | | ]	2100.5
Dissolved O_2 mg/l	[61.0 | 80] DO% 78.7	[ | | ]	2351.5
Turbidity NTU	[ | | ] ORP 164.4	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [X] No [] Comments: _____
 Today: Rain 4 Cloud cover 59.6 Wind 5.96
 Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 15% Water Odour: N.I.
 Water Surface Condition: Normal Slick Scum Foaming Other
 Algae: On substrate: N L S M E In water column: N L S M E
 Macrophytes: Emergent: N L S M E Submerged: N L S M E
 Floating: N L S M E
 Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
 N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [| |] % Run [| |] % Macrophytes [| |] % in: R % E %
 Pool (rocky-K) [| |] % Pool (sandy-S) [| |] % K % S % Run %
 Dry [| |] % Riffle + Run + Pool + Dry = 100% Algae [| |] % in: R % E %
 Edge [| |] % K % S % Run %
 Edge is % of habitat available to sample from L and R banks Blanketing silt [| |] %

COMMENTS: _____

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
 Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* **Bare ground** None Little Some Moderate Extensive

* **Grass** None Little Some Moderate Extensive

* **Shrubs** None Little Some Moderate Extensive

* **Trees <10 m high** None Little Some Moderate Extensive

* **Trees >10 m high** None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native

Azolla	N	L	S	M	E	<u>Water Ribbon (Triglochin)</u>	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Exotic

Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

AEF003

B26 1.34

Queensland
Government
Natural Resources
and Mines

WATER QUALITY SAMPLING FIELD SHEET

Site Number	[ | | | | | ]	Sample Number	[ | | | | | ]
Site Name			
Date	[14/11/2012]	Project Name	
Time (24 hrs)	[06:45]	QHSS Analysis No.	[ | | | | ]
Project Code	[ | | | | ]	Submitted	[A B C D E F G H I J K L M N]
Run Code	[ | | | | ]	Received	[ | | | | ]
Party	[ | | ] [ | | ] [ | | ]		

SAMPLING LOCATION: Latitude _____ Longitude _____
Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S}/\text{cm}@25^\circ\text{C}$	[11003] C 906	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	[20.0] MD 650.00	[ | | ]	2080.5
pH	[7.49] SAL 0.50	[ | | ]	2100.5
Dissolved O_2 mg/l	[31.58] DO 39.8	[ | | ]	2351.5
Turbidity NTU	[ | | ] ORP 206.1	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0

Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs

WEATHER: Rain in past week: Yes [y] No [] Comments:
Today: Rain [x] Cloud cover 0% Wind mild breeze
Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 15% Water Odour: W.I.
Water Surface Condition: Normal Slick Scum Foaming Other
Algae: On substrate: N L S M E In water column: N L S M E
Macrophytes: Emergent: N L S M E Submerged: N L S M E
Floating: N L S M E
Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E
N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH: No Change

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %

Edge is % of habitat available to sample from L and R banks

Blanketing silt [| |] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____
Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing

1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural

2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None *Little* *Some* Moderate Extensive

Water colour: *Clear* *Green* *Opaque* Tannin Other

Sediment deposits: *None* Sand Silt Other

Algae: On substrate: None *Little* Some Moderate Extensive

In water column: *None* Little Some Moderate Extensive

Water odour: *No* Yes Specify

Substrate odour: *No* Yes Specify

Water surface: *Normal* Slick Scum Foaming Other

Variety of habitat: *Shallow* *Deep* *Pool* Run Riffle

(circle all types) Undercut bank LWD *Macrophytes* Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).

No flow Low Moderate High Flood

(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little *Some* Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native *no change*

Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)



WATER QUALITY SAMPLING FIELD SHEET

Site Number [ | | | | | ]	Sample Number [ | | | | | ]
Site Name _____	Project Name _____
Date [11/11/2012]	QHSS Analysis No. [ | | | | ]
Time (24 hrs) [07:15]	Submitted [ | | | | | ]
Project Code [ | | | | | ]	Received [ | | | | | ]
Run Code [ | | | | | ]	
Party [ | | ] [ | | ] [ | | ]	

SAMPLING LOCATION: Latitude _____ **Longitude** _____

Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu\text{S/cm @ 25}^\circ\text{C}$	219.5	[ | | ]	2010.5
Water Temperature $^\circ\text{C}$	16.19	[ | | ]	2080.5
pH	8.14	[ | | ]	2100.5
Dissolved O_2 mg/l	8.66	[ | | ]	2351.5
Turbidity NTU	354.4	[ | | ]	2030.5
Air Temperature $^\circ\text{C}$	[ | | ]	[ | | ]	2065.5
Total Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l CaCO_3	[ | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | ]	[ | | ]	2046.5
Velocity m/s	[ | | ]	[ | | ]	240.0
Gauge Height m	[ | | ]	[ | | ]	100.0
Discharge m^3/s}	[ | | ]	[ | | ]	140.0
Discharge Method: measured (gauged) ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs			

WEATHER: Rain in past week: Yes ☒ No ☐ Comments: *FM*

Today: Rain ☒ Cloud cover *0%* Wind *Wedge*

Comments: _____

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: *0%* Water Odour: *US*

Water Surface Condition: Normal ☒ Slick ☐ Scum ☐ Foaming ☐ Other _____

Algae: On substrate: ☒ L S M E In water column: ☒ L S M E

Macrophytes: Emergent: ☒ L S M E Submerged: ☒ L S M E

Impacts: Human N L S M E Pastoral animals N L S M E Non-pastoral animals N L S M E

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R) [ | | ] %	Run [ | | ] %	Macrophytes [ | | ] % in: R % E %
Pool (rocky-K) [ | | ] %	Pool (sandy-S) [ | | ] %	K % S % Run %
Dry [ | | ] %	Riffle + Run + Pool + Dry = 100%	Algae [ | | ] % in: R % E %
Edge [ | | ] %		K % S % Run %
Edge is % of habitat available to sample from L and R banks		Blanketing silt [ | | ] %

COMMENTS:

(Office use only) Entered into Hydsys _____ by _____ Checked on _____ by _____

Entered into AQEIS _____ by _____ Checked on _____ by _____

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse: *no change*

Adjacent landuse: Left bank: Score Type Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little *Some* Moderate Extensive

Water colour: Clear Green *Opaque* Tannin Other

Sediment deposits: None Sand Silt Other

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run *Riffle* Other

(circle all types)
Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate *High* Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native						<i>no change</i>					
Azolla	N	L	S	M	E	Water Ribbon (<i>Triglochin</i>)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (<i>Pistia stratiotes</i>)	N	L	S	M	E
Hornwort (<i>Ceratophyllum</i>)	N	L	S	M	E	Water Primrose (<i>Ludwigia</i>)	N	L	S	M	E
Stoneworts (<i>Chara</i> or <i>Nitella</i>)	N	L	S	M	E	Sedge (<i>Cyperus</i>)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (<i>Juncus</i>)	N	L	S	M	E
Water Milfoil (<i>Myriophyllum</i>)	N	L	S	M	E	Cumbungi (<i>Typha</i>)	N	L	S	M	E
Pondweeds (<i>Potamogeton</i>)	N	L	S	M	E	Slender Knotweed (<i>Persicaria</i>)	N	L	S	M	E
Ribbonweed (<i>Vallisneria</i>)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (<i>Eichhornia</i>)	N	L	S	M	E	Alligator Weed (<i>Alternanthera</i>)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (<i>Urochloa</i>)	N	L	S	M	E	<i>Egeria</i>	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none L = 1-10% (little) S = 10-50% (some) M = 50-75% (moderate) E = >75% (extensive)

WATER QUALITY SAMPLING FIELD SHEET

Site Number []	Sample Number []																												
Site Name _____																													
Date [19 / 11 / 2021]	Project Name _____																												
Time (24 hrs) [07 : 55]	QHSS Analysis No. []																												
Project Code []	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td><td>N</td> </tr> <tr> <td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td> </tr> </table>	A	B	C	D	E	F	G	H	I	J	K	L	M	N														
A		B	C	D	E	F	G	H	I	J	K	L	M	N															
Run Code []																													
Party [] [] []	Submitted Received																												

SAMPLING LOCATION: Latitude _____ **Longitude** _____
 Reach orientation (looking downstream): N NE E SE S SW W NW Datum: _____

WATER QUALITY

Parameter	Value	Quality	Variable
Conductivity $\mu S/cm @ 25^{\circ}C$	5 PC [6 | 3 | 1 | 1 | ] C 555	[ | | ]	2010.5
Water Temperature $^{\circ}C$	[1 | 8 | 1 | 0 | 7] TDS 409.50	[ | | ]	2080.5
pH	[1 | 8 | 1 | 1 | 6] ORP 155.5	[ | | ]	2100.5
Dissolved O_2 mg/l	[1 | 7 | 1 | 0 | 6] DO % 85.4	[ | | ]	2351.5
Turbidity NTU	[ | | | ] SAL 0.31	[ | | ]	2030.5
Air Temperature $^{\circ}C$	[ | | 0 | | ]	[ | | ]	2065.5
Total Alkalinity mg/l $CaCO_3$	[ | | | 0 | | ]	[ | | ]	2113.5
Phenol Alkalinity mg/l $CaCO_3$	[ | | | 0 | | ]	[ | | ]	2114.5
Transparency (secchi) m	[ | | 0 | | | ]	[ | | ]	2046.5
Velocity m/s	[ | 0 | | | ]	[ | | ]	240.0
Gauge Height m	[ | | | 0 | | | ]	[ | | ]	100.0
Discharge m^3/s	[ | | | | 0 | | | | ]	[ | | ]	140.0
Discharge Method:	measured ☐ obtained from rating curve ☐ estimated: ☐ no flow ☐ trickle ☐ >0.01 cumecs		

WEATHER: *Rain in past week:* Yes [☒] No [☐] Comments: *Fire*

Today: Rain *✓* Cloud cover *0%* Wind *Breeze*

Comments:

OBSERVATIONS AT WATER SAMPLING SITE (within 2 metres of sampling point or on closest bank)

Shading: 20 %		Water Odour: N.I																
Water Surface Condition: Normal		Slick		Scum		Foaming		Other										
Algae:	On substrate:	N	L	S	M	E	In water column:	N	L	S	M	E						
Macrophytes:	Emergent:	N	L	S	M	E	Submerged:	N	L	S	M	E						
	Floating:	N	L	S	M	E												
Impacts:	Human	N	L	S	M	E	Pastoral animals	N	L	S	M	E	Non-pastoral animals	N	L	S	M	E
N = none		L = 1-10% (little)		S = 10-50% (some)		M = 50-75% (moderate)		E = >75% (extensive)										

PERCENT OF HABITAT TYPES IN 100 m REACH:

Riffle (R)	[ | | ] %	Run	[ | | ] %	Macrophytes	[ | | ] % in: R	 %	E	 %
Pool (rocky-K)	[ | | ] %	Pool (sandy-S)	[ | | ] %		K	 %	S	 %
Dry	[ | | ] %	Riffle + Run + Pool + Dry = 100%		Algae	[ | | ] % in: R	 %	E	 %
Edge	[ | | ] %				K	 %	S	 %
Edge is % of habitat available to sample from L and R banks				Blanketing silt	[ | | ] %			

COMMENTS:

(Office use only) Entered into Hydsys / / by Checked on / / by
Entered into AQEIS / / by Checked on / / by

REACH OBSERVATIONS (of 100 m stream length)

Upstream landuse:

Adjacent landuse: Left bank: Score Type no change Right bank: Score Type

0. Urban/semi-urban, industrial 3. Light grazing, vegetation clearing
1. Irrigated cropping, intensive forestry or heavy grazing 4. Natural
2. Non-irrigated cropping, moderate grazing

Local catchment erosion: None Little Some Moderate Extensive

Water colour: Clear Green Opaque Tannin

Sediment deposits: None Sand Silt Other high flow deep

Algae: On substrate: None Little Some Moderate Extensive
In water column: None Little Some Moderate Extensive

Water odour: No Yes Specify

Substrate odour: No Yes Specify superficial organic

Water surface: Normal Slick Scum Foaming Other

Variety of habitat: Shallow Deep Pool Run Riffle
(circle all types) Undercut bank LWD Macrophytes Other

Bars: (bed surface protruding from normal water level and forming a bar) %

Flow level: (relative to 'watermark' i.e. normal inundation level shown by limit of terrestrial grasses, or by eroded area, or boundary in bank sediment types).
No flow Low Moderate High Flood
(dry/isolated) (<watermark) (=watermark) (>watermark)

RIPARIAN ZONE (to maximum 100 m width)

Width of riparian zone: Left bank m Right bank m

* Bare ground None Little Some Moderate Extensive

* Grass None Little Some Moderate Extensive

* Shrubs None Little Some Moderate Extensive

* Trees <10 m high None Little Some Moderate Extensive

* Trees >10 m high None Little Some Moderate Extensive

Presence of exotic riparian species None Little Some Moderate Extensive

Width of continuous tree zone from bank: Left bank m Right bank m

None = 0% Little = 1-10% Some = 10-50% Moderate = 50-75% Extensive >75% * Can add to >100%

MACROPHYTES Indicate the presence and abundance of the following common taxa in the 100 m reach:

Native no change

Azolla	N	L	S	M	E	Water Ribbon (Triglochin)	N	L	S	M	E
Duckweed	N	L	S	M	E	Water Lettuce (Pistia stratiotes)	N	L	S	M	E
Hornwort (Ceratophyllum)	N	L	S	M	E	Water Primrose (Ludwigia)	N	L	S	M	E
Stoneworts (Chara or Nitella)	N	L	S	M	E	Sedge (Cyperus)	N	L	S	M	E
Hydrilla	N	L	S	M	E	Common Rush (Juncus)	N	L	S	M	E
Water Milfoil (Myriophyllum)	N	L	S	M	E	Cumbungi (Typha)	N	L	S	M	E
Pondweeds (Potamogeton)	N	L	S	M	E	Slender Knotweed (Persicaria)	N	L	S	M	E
Ribbonweed (Vallisneria)	N	L	S	M	E	.....	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E
Exotic											
Water Hyacinth (Eichhornia)	N	L	S	M	E	Alligator Weed (Alternanthera)	N	L	S	M	E
Salvinia	N	L	S	M	E	Elodea	N	L	S	M	E
Para Grass (Urochloa)	N	L	S	M	E	Egeria	N	L	S	M	E
.....	N	L	S	M	E	.....	N	L	S	M	E

Comments:

N = none

L = 1-10% (little)

S = 10-50% (some)

M = 50-75% (moderate)

E = >75% (extensive)

APPENDIX S

Surface Water Quality Technical Report

Appendix H Interim site-specific WQO derivation report

BORDER TO GOWRIE REVISED DRAFT ENVIRONMENTAL IMPACT STATEMENT

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- Figure 3.1 Surface water quality monitoring locations
Figure 3.2 Surface water quality monitoring locations

1 Introduction

The Border to Gowrie (B2G) baseline surface water quality field assessment had been designed to provide sufficient information for interim site-specific guideline values (relevant to the B2G alignment) to be developed. The baseline water quality conditions were collated from a series of surface water grab samples (beginning June 2018, recommencing in Dec 2020 through to Nov 2021) and allow a calculation of interim site-specific water quality objectives (WQOs).

The monitoring program (up to 15 data values over two years with inclusion of data derived for the B2G EIS) will not meet the 18 data values over two years for calculation of sub-regional WQOs, as recommended by the *Queensland Water Quality Guidelines (QWQG)* 2009. However, percentile estimates for interim guidelines can be derived from eight or more samples across representative environments (*QWQG 2009*). As such, the current program is expected to allow a reliable derivation of interim WQOs that will be used to identify any impact from construction works.

2 Scope

This water quality derivation report has been compiled using data collected for the *Inland Rail: Border to Gowrie Environmental Impact Assessment* and during the *Inland Rail: Border to Gowrie baseline water quality monitoring program – final factual report*. This report should be read in conjunction with both of these reports.

This report details the process for the derivation of interim site-specific WQO including raw data. Interim site-specific WQOs are provided as 20th and 80th percentiles for the following surface water quality parameters:

- pH
- Specific electrical conductivity (EC)
- Dissolved oxygen (DO) saturation
- Chlorophyll a.
- Total suspended solids
- Turbidity
- Total Phosphorus (P)
- Filterable reactive phosphorus (FRP)
- Ammonia
- Nitrate
- Nitrite
- Oxidised nitrogen (Nox)
- Total kjeldahl nitrogen (TKN)
- Dissolved metals (arsenic, cadmium, chromium, copper, nickel, lead, zinc and mercury)

3 Surface water quality data collection

3.1 Survey locations

A total of 20 sites were investigated during the monitoring program and align with those used for surface water quality assessment in the B2G EIS (refer Table 3.1, Table 3.2, Figure 3.1 and Figure 3.2). Monitoring sites were typically located on the following significant watercourses (or contributing tributaries) associated with the B2G Project:

- Macintyre River
- Macintyre Brook
- Canning Creek
- Nicol Creek
- Grasstree Creek
- Condamine River
- Condamine River (North Branch)
- Westbrook Creek
- Dry Creek

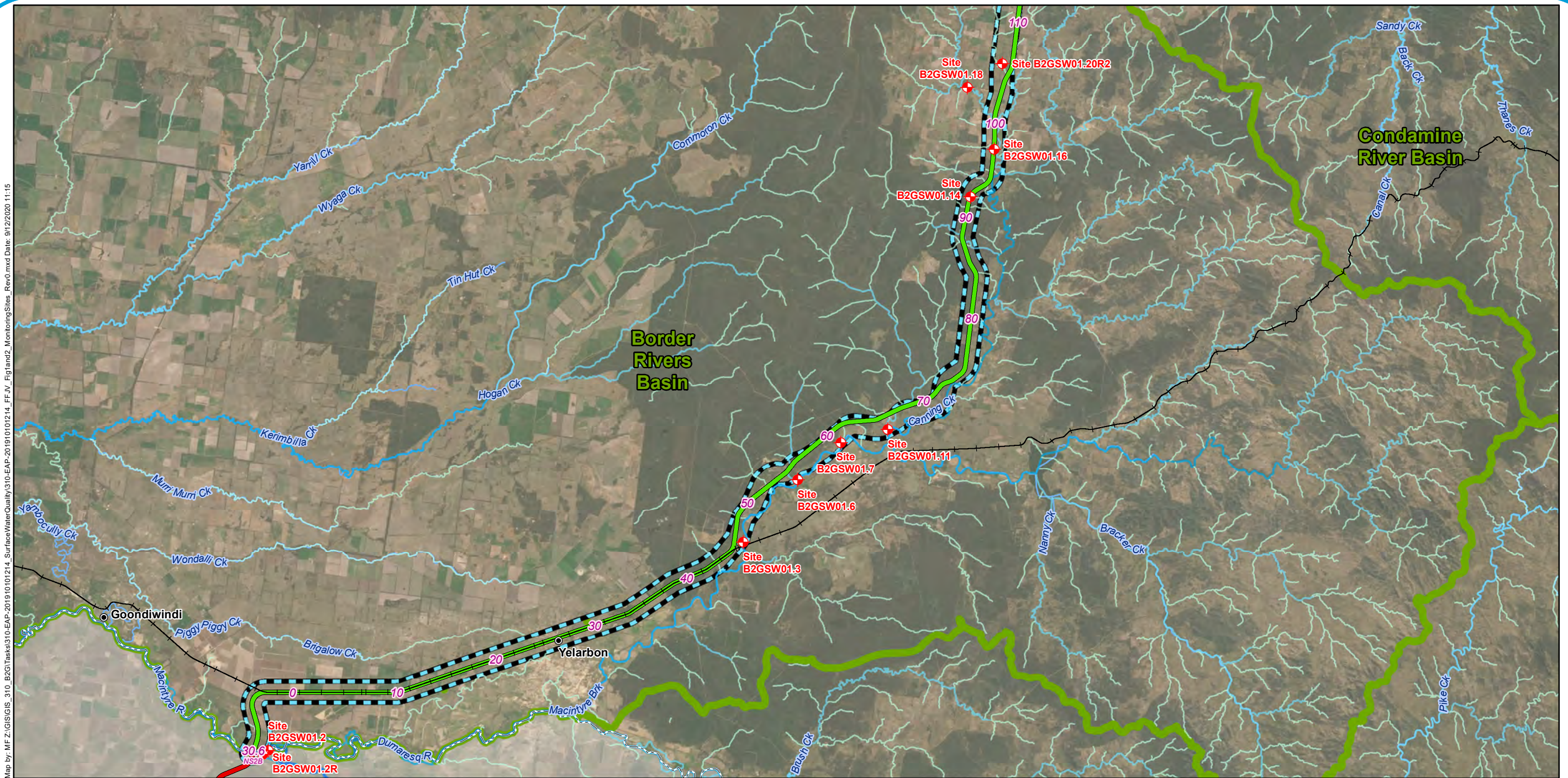
Table 3.1 B2G monitoring sites

Site	Watercourse	Sub-catchment
B2GSW01.2	Macintyre River	Macintyre Barwon Floodplain
B2GSW01.2R	Macintyre River	
B2GSW01.3	Macintyre Brook	Lower Macintyre Brook
B2GSW01.6	Macintyre Brook	
B2GSW01.7	Macintyre Brook	
B2GSW01.11	Canning Creek	Canning Creek
B2GSW01.14	Unnamed waterway	
B2GSW01.16	Unnamed waterway	
B2GSW01.18	Unnamed waterway	
B2GSW01.20R2	Nicol Creek	
B2GSW01.23	Unnamed waterway	Southern Condamine
B2GSW01.24	Grasstree Creek	
B2GSW01.27	Condamine River	Central Condamine
B2GSW01.29	Unnamed waterway	
B2GSW01.30	Condamine River	
B2GSW01.32	Condamine River (North Branch)	
B2GSW01.33	Condamine River (North Branch)	
B2GSW01.39	Westbrook Creek	Oakey Creek
B2GSW01.40	Dry Creek	
B2GSW01.42	Dry Creek	

The location and contributing number of sample data points of the surface water quality monitoring sites is presented in Table 3.2.

Table 3.2 Surface water quality and aquatic ecology field assessment sites (including number of samples obtained during baseline monitoring program)

Site ID	Site location (zone 56J)		Position	Sample number (n)
	Easting	Northing		
B2GSW01.2	252526.14 m E	6826589.54 m S	2.3 km upstream of rail alignment	11
B2GSW01.2R	251992.66 m E	6826197.88	1.5 km upstream of rail alignment	11
B2GSW01.3	297987.40 m E	6846544.39 m S	900 m downstream of rail alignment	12
B2GSW01.6	303224.05 m E	6852534.59 m S	1.2 km downstream of rail alignment	13
B2GSW01.7	307340.87 m E	6856089.27 m S	1.3 km downstream of rail alignment	13
B2GSW01.11	311857.57 m E	6857333.54 m S	1.3 km downstream of rail alignment	12
B2GSW01.14	319758.71 m E	6879596.17 m S	10 m upstream of rail alignment	0
B2GSW01.16	322034.45 m E	6884153.22 m S	20 m downstream of rail alignment	12
B2GSW01.18	319459.85 m E	6890038.43 m S	3 km upstream of rail alignment	11
B2GSW01.20R2	322807.61 m E	6892338.29 m S	1.5 km downstream of rail alignment	2
B2GSW01.23	330232.23 m E	6913921.81 m S	1.8 km upstream of rail alignment	11
B2GSW01.24	337772.29 m E	6919155.06 m S	670 m upstream of rail alignment	12
B2GSW01.27	338748.32 m E	6922941.94 m S	2 km upstream of rail alignment	12
B2GSW01.29	342210.77 m E	6922517.08 m S	900 m downstream of rail alignment	3
B2GSW01.30	347306.73 m E	6920094.77 m S	7 km downstream of rail alignment	11
B2GSW01.32	344676.97 m E	6926062.65 m S	20 m upstream of rail alignment	8
B2GSW01.33	345293.94 m E	6925389.04 m S	870 m downstream of rail alignment	10
B2GSW01.39	379694.11 m E	6952313.72 m S	800 m downstream of rail alignment	12
B2GSW01.40	379972.90 m E	6954172.10 m S	30 m downstream of rail alignment	11
B2GSW01.42	383710.24 m E	6954556.98 m S	2.17 km downstream of rail alignment	13

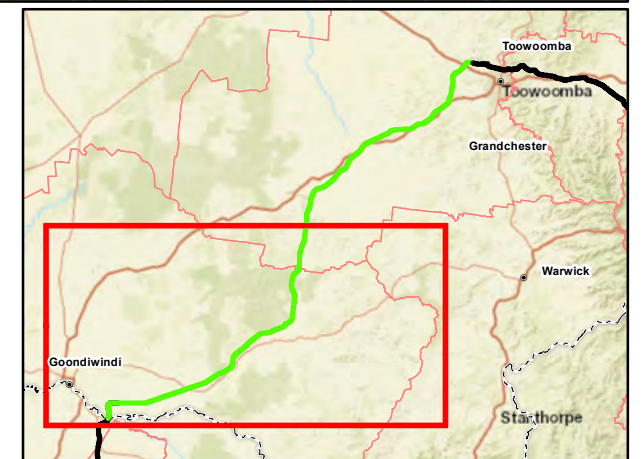


Legend

- Surface water quality field assessment sites
- Chainage (km)
- Localities
- North Star to NSW/QLD border alignment
- Border to Gowrie alignment
- Existing rail (operational)
- NSW/QLD border
- Catchment boundaries
- Surface water impact assessment area

Drainage features

- Order 2 - 3
- Order 4 - 5
- Order 6 - 7
- Order 8 - 9



A3 scale: 1:400,000

0 3 6 9 12 15 km

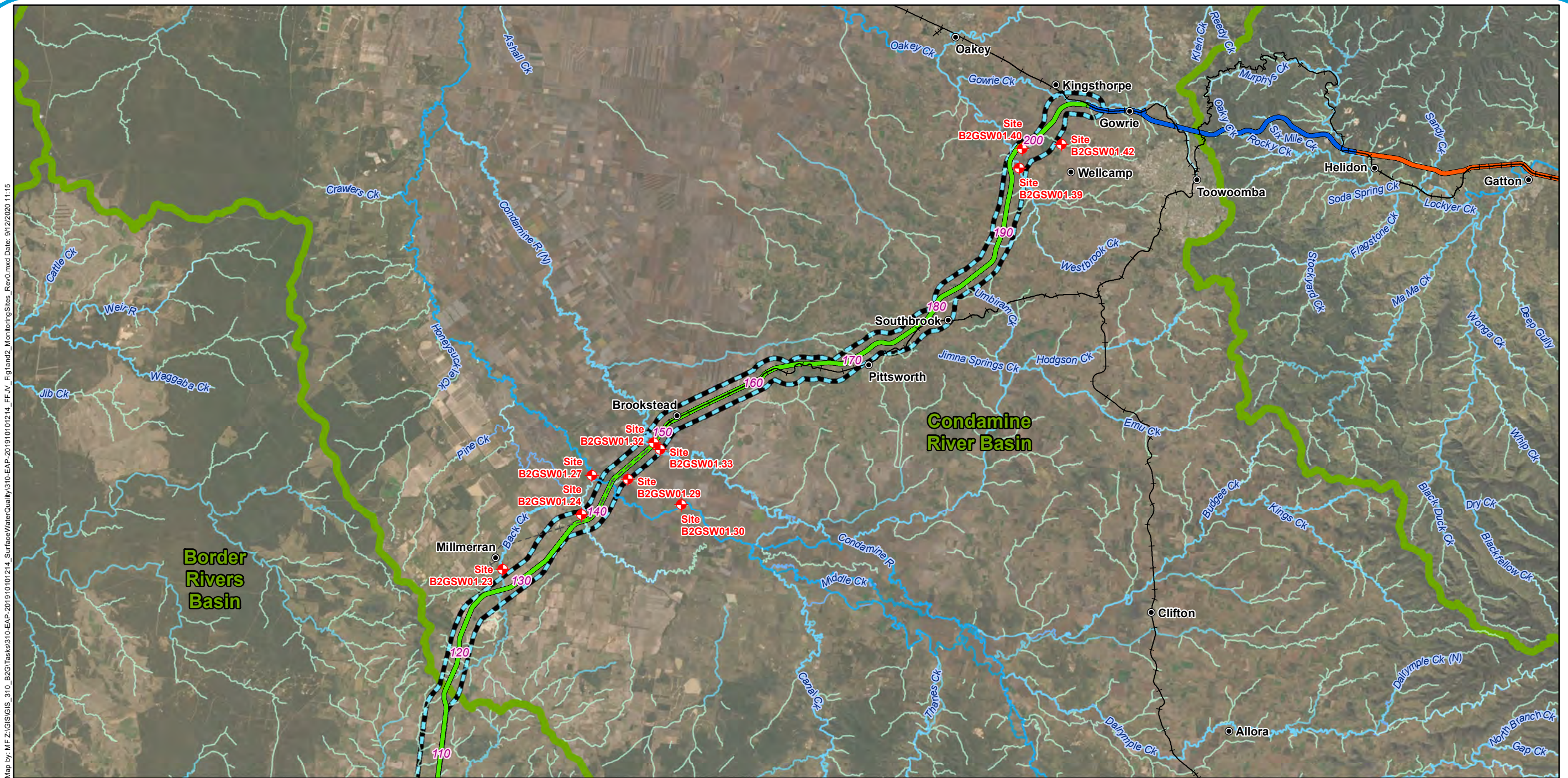


Issue date: 09/12/2020 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Border to Gowrie

Figure 3.1

Surface water quality field assessment sites

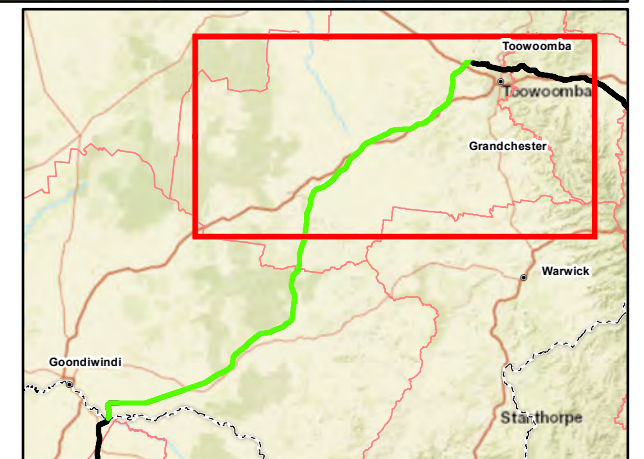


Legend

- Surface water quality field assessment sites
- Chainage (km)
- Localities
- Border to Gowrie alignment
- Gowrie to Helidon alignment
- Helidon to Calvert alignment
- Existing rail (operational)
- Existing rail (non-operational)
- Catchment boundaries
- Surface water impact assessment area

Drainage features

- Order 2 - 3
- Order 4 - 5
- Order 6 - 7



A3 scale: 1:400,000
0 3 6 9 12 15 km



Issue date: 09/12/2020 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Border to Gowrie

Figure 3.2

Surface water quality field assessment sites

3.2 Surface water quality baseline monitoring timing

The timing of field surveys for the surface water quality monitoring (from the B2G EIS and B2G baseline monitoring) are provided in Table 3.3. A high flow monitoring site occurred during March 2021 and is separated from the data used to calculate interim, site-specific WQOs. Refer to the *Inland Rail: Border to Gowrie baseline water quality monitoring program – final factual report* for further details around hydrological flow status.

Table 3.3 Surface water quality field survey schedule

Field survey task	Timing	Work program
Routine surface water quality field monitoring	11 to 20 June 2018	EIS monitoring
	26 November to 3 December 2018	EIS monitoring
	11 to 19 February 2019	EIS monitoring
	29 April 2019 to 2 May 2019	EIS monitoring
	15 to 19 May 2019	EIS monitoring
	14 to 17 December 2020	Baseline surface water monitoring
	19 to 21 January 2021	Baseline surface water monitoring
	23 to 25 February 2021	Baseline surface water monitoring
	13 to 15 April 2021	Baseline surface water monitoring
	5 to 7 May 2021	Baseline surface water monitoring
	26 to 28 May 2021	Baseline surface water monitoring
	22 to 24 June 2021	Baseline surface water monitoring
	21 to 23 July 2021	Baseline surface water monitoring
	24 to 26 August 2021	Baseline surface water monitoring
	21 to 23 September 2021	Baseline surface water monitoring
	18 to 20 October 2021	Baseline surface water monitoring
	17 to 19 November 2021	Baseline surface water monitoring
High-flow event surface water quality field monitoring	23 to 25 March 2021	Baseline surface water monitoring

4 Current water quality objectives and environmental values

The Project alignment traverses through the Border Rivers basin and the Condamine River basin as recognised under the *Environment Protection (Water and Wetland Biodiversity) Policy 2019* (EPP (Water and Wetland Biodiversity)). Water quality objectives have been developed under the provisions of the EPP (Water and Wetland Biodiversity), under the *Environment Protection Act 1994* (EP Act), to support and protect different Environmental Values (EVs) identified for waters within both the Condamine River and Border River basin areas.

4.1 Environmental values

The Project alignment crosses through eight sub-catchments of the Condamine River basin and the Border Rivers basin, each of which are recognised for their own unique EVs, as outlined in Table 4.1.

Table 4.1 Environmental values for sub-catchments that the Project alignment intersects

Environmental values	Aquatic Ecosystems	Irrigation	Farm Supply	Stock water	Aquaculture	Human consumer	Primary recreation	Secondary recreation	Visual recreation	Drinking water	Industrial use	Cultural, spiritual and ceremonial values
Sub-catchments of the Condamine River basin												
Upper Oakey	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hodgson Creek	✓	✓	✓	✓		✓			✓			✓
Ashall Creek	✓	✓	✓	✓					✓		✓	✓
Condamine River North Branch	✓	✓	✓						✓	✓	✓	✓
Condamine River South Branch	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
Sub-Catchments of the Border Rivers basin												
Canning Creek	✓	✓		✓					✓			✓
Lower Macintyre Brook	✓	✓	✓	✓		✓	✓		✓	✓		✓
Macintyre Barwon Floodplain	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓

Source: DES (2019b, 2019c)

4.2 Water quality objectives

The Project alignment extends through the following water type zones within the Border Rivers and Condamine River basins, as published in the relevant Healthy Waters Management Plan:

- Condamine River basin:
 - Oakey Creek
 - Central Condamine
 - Southern Condamine

- Border Rivers basin:
 - Canning Creek
 - Lower Macintyre Brook
 - Macintyre Barwon floodplain.

Regional water quality objectives for each of these water type zones are presented in Table 4.2 and Table 4.3. The WQOs in Table 4.2 are for physico-chemical parameters and are consistent with the accreditable water quality target values published in the relevant Healthy Waters Management Plan. WQOs in Table 4.2 are presented for low flow and high flow conditions. The WQOs in Table 4.3 are for heavy metals and other toxic contaminants and are consistent with the toxicant default guideline values published in the Australia and New Zealand water quality guidelines (ANZG) (ANZECC & ARMCANZ, 2018).

Table 4.2 Water quality objectives for moderately disturbed waters intersected by the Project

Water type zone	Water flow	Turbidity	Total P	Chlorophyll a	Total nitrogen	Oxidised nitrogen	Ammonia	Dissolved oxygen		pH	EC	Salinity	TSS
Unit	-	NTU	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	%sat	log[H ⁺]	µS/cm	mg/L	mg/L
Condamine River basin ¹													
Oakey Creek (Sites 34-43)	Low flow	13	110	5	1,000	5	10	ID	60-110	7.7-8.3	510	NA	14
	High flow	55	340	ID	1,280	ID	ID			7.4-8.1	380		65
Central Condamine (Sites 27-33)	Low flow	25	170	9	860	4	4			7.4-8.3	890		25
	High flow	220	950	4	2,200	480	ID			7.0-7.6	290		130
Southern Condamine (Sites 21-26)	Low flow	9	45	5	595	3	6			7.2-7.9	170		8
	High flow	25	60	ID	830	ID	ID			7.0-7.6	160		17
Border Rivers basin ²													
Canning Creek (Sites 9-20)	Low flow	35	30	ID	520	6	10	>5	60-110	7.2-7.8	200	NA	25
	High flow	50	40	ID	600	ID	ID			6.9-7.9	165		60
Lower Macintyre Brook (Sites 3-8)	Low flow	11	55	ID	710	18	8			7.4-8.0	370		10
	High flow	25	70	ID	910	ID	ID			7.2-8.0	250		25
Macintyre Barwon Floodplain (Sites 1-2)	Low flow	30	70	3	575	10	20			7.4-8.0	240		25
	High flow	110	150	ID	900	195	ID			7.0-7.5	180		70

Table notes:

P, EC and TSS = phosphorus, electrical conductivity and total suspended solids respectively.

ID = Insufficient data for determination of water quality objective

NTU = Nephelometric Turbidity Units

µg/L = micrograms per litre

mg/L = milligrams per litre

µS/cm = microsiemens per centimetre

Source: 1. Healthy Waters Management Plan: Condamine River Basin (DES 2019b); 2. Healthy Waters Management Plan: Queensland Border Rivers and Moonie River Basins (DES 2019c)

Table 4.3 Water quality objectives for protection of slightly to moderately disturbed waters: heavy metals and other toxic contaminants

Water type zone	Arsenic (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Mercury (mg/L)	Nickle (mg/L)	Zinc (mg/L)	Naphthalene (mg/L)
Condamine River basin									
Oakey Creek	0.024	0.002	0.001	0.0014	0.0034	0.0006	0.011	0.008	0.016
Central Condamine	0.024	0.002	0.001	0.0014	0.0034	0.0006	0.011	0.008	0.016
Southern Condamine	0.024	0.002	0.001	0.0014	0.0034	0.0006	0.011	0.008	0.016
Border Rivers basin									
Canning Creek	0.024	0.002	0.001	0.0014	0.0034	0.0006	0.011	0.008	0.016
Lower Macintyre Brook	0.024	0.002	0.001	0.0014	0.0034	0.0006	0.011	0.008	0.016
Macintyre Barwon floodplains	0.024	0.002	0.001	0.0014	0.0034	0.0006	0.011	0.008	0.016

Source: ANZG (ANZECC & ARMCANZ, 2018)

5 Interim site-specific water quality objective derivation

All data was assessed for definition under high or low flow conditions in order to qualify data for use site-specific water quality derivation. Low flow conditions followed those from current EPP (Water and Wetland Biodiversity) 2019 flow qualifiers (refer *Inland Rail: Border to Gowrie baseline water quality monitoring program – final factual report*).

Data that qualified as recorded during high flow conditions were removed from the dataset used for site-specific WQO derivation.

Raw data was then collated, according to site (and Subcatchment) and any laboratory analysed values that were deemed to be at the limit of reporting were halved.

Data normalisation was adopted to further reduce skew between values collected from each site. Outliers were removed from the dataset where there was deviation from of 1.5 interquartile range limits, grouped by site.

After normalisation, sites that had less than eight (8) data values (identified as a minimum for derivation of interim site-specific guidelines) were removed from further analysis.

Interim site-specific objectives were generated for slightly to moderately disturbed ecosystem (as per *Australian and New Zealand Environment and Conservation Council (ANZECC) and Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018* and *Environmental Protection (Water and Wetland Biodiversity) Policy 2019*).

The use of *control* sites (sites prior to impact are used instead of *reference* sites) as monitoring sites, were used to derive the interim site-specific water quality objectives. Interim site-specific WQOs were identified at a conservative limit of 20th and 80th percentiles of existing dataset. The conservative limit was selected due to the current protection status of all waters and to remove potential skew on data from a lower statistical power of a limited (interim) set of water quality values.

6 Results

Data normalisation and resulting interim site-specific water quality objectives are identified in the following sections. Raw data used within these derivatives are drawn from the *Inland Rail Border to Gowrie Surface water Quality Technical Appendix* and the Final Report for the *Inland Rail Border to Gowrie Baseline Surface water Quality Monitoring Program*.

6.1 Data normalisation

Box and whisker plots were used to identify instances of non-normal distributions (as exceedances outside of inter-quartile range) within the water quality data ranging across all data. Box and whisker plots were compiled without flood event data. Outliers were identified as values in exceedance of 1.5 interquartile range limits. The outliers were then considered for exclusion from datasets used for objective derivation. Outliers for exclusion are noted in Table 6.1. Refer to Appendix B for box and whisker plots (after data normalisation). Total number of samples are presented in Table 6.2. Where data numbers were less than eight (8), sites were removed from analysis. Sites that were removed were:

- B2G 1.14
- B2G 1.20R2
- B2G 1.29.

Table 6.1 Outliers for exclusion identified from box and whisker plot after removal of flood events (March 2021)

Site	Parameter
B2GSW01.2	NIL
B2GSW01.2R	NIL
B2GSW01.3	NIL
B2GSW01.6	NIL
B2GSW01.7	Mercury (Oct 2021)
B2GSW01.11	Chlorophyll a (Apr 2019), FRP (Dec 2020)
B2GSW01.14	NIL
B2GSW01.16	Conductivity (Apr 2019), Chlorophyll a (Apr 2019), Total P (Apr 2019), TSS (Apr 2019), Ammonia (Apr 2019), TKN (Apr 2019), TN (Apr 2019)
B2GSW01.18	NIL
B2GSW01.20R2	NIL
B2GSW01.23	DO %sat (Jan 2021)
B2GSW01.24	Nitrate (Nov 2021), Nox (Nov 2021), Lead (Feb 2019)
B2GSW01.27	Total P (Oct 2021), TSS (Oct 2021), Turbidity (Oct 2021)
B2GSW01.29	NIL
B2GSW01.30	NIL
B2GSW01.32	NIL
B2GSW01.33	Nitrite (Nov 2021)
B2GSW01.39	Nitrite (Jun 2018), TKN (Apr 2021), TN (Apr 2021)
B2GSW01.40	NIL
B2GSW01.42	FRP (Dec 2020), Mercury (Feb 2021)

Table 6.2 B2G water quality number of samples and sample ranges (June-2018, Nov 2019, February 2019, April 2019, May 2019, December 2020 – November 2021)

Monitoring site	n sample	Continuous n sample (Dec 2020 – Nov 2021)
B2GSW01.2	15	11
B2GSW01.2R	15	11
B2GSW01.3	16	12
B2GSW01.6	17	13
B2GSW01.7	18	13
B2GSW01.11	16	12
B2GSW01.14	4	0
B2GSW01.16	16	12
B2GSW01.18	15	12
B2GSW01.20R2	3	2
B2GSW01.23	13	11
B2GSW01.24	15	12
B2GSW01.27	15	12
B2GSW01.29	4	3
B2GSW01.30	15	11
B2GSW01.32	9	8
B2GSW01.33	11	10
B2GSW01.39	16	12
B2GSW01.40	14	11
B2GSW01.42	18	13

6.2 Interim site-specific water quality objective values

6.2.1 Physico-chemical parameter baseline values

Physico-chemical baseline values are presented below by Subcatchment and site number. Subcatchments with site-specific baseline values include:

- Macintyre Barwon Floodplain
- Lower Macintyre Brook
- Canning Creek
- Southern Condamine
- Central Condamine
- Oakey Creek.

Macintyre Barwon Floodplain

Monitoring sites located within the Macintyre Barwon Floodplain Subcatchment include:

- B2G 1.2
- B2G 1.2R.

Physico-chemical baseline percentiles and regional EPP (2019) WQO's are identified in Table 6.3 and Table 6.4.

Table 6.3 Site 1.2 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.03	7.77	7.4-8.0
Specific conductivity	µs/cm at 25°C	210.80	320.00	240
DO saturation	(%)	64.02	86.16	60-110
Chlorophyll a	µg/L	2.50	5.00	3.00
TSS	mg/L	11.60	29.20	25.00
Turbidity	NTU	12.64	32.00	30.00

Table 6.4 Site 1.2R physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.13	7.66	7.4-8.0
Specific conductivity	µs/cm at 25°C	210.80	310.00	240
DO saturation	(%)	66.54	87.82	60-110
Chlorophyll a	µg/L	2.50	4.20	3
TSS	mg/L	6.64	32.40	25
Turbidity	NTU	13.88	50.20	30

Lower Macintyre Brook

Monitoring sites located within the Lower Macintyre Brook Subcatchment include:

- B2G 1.3
- B2G 1.6
- B2G 1.7.

Physico-chemical baseline percentiles and regional EPP (2019) WQO's are identified in Table 6.5, Table 6.6 and Table 6.7.

Table 6.5 Site 1.3 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.11	7.37	7.4-8.0
Specific conductivity	µs/cm at 25°C	210.00	406.00	370
DO saturation	(%)	52.20	77.70	60-110
Chlorophyll a	µg/L	2.50	12.00	Indeterminate
TSS	mg/L	8.00	24.00	10
Turbidity	NTU	7.90	35.00	11

Table 6.6 Site 1.6 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.03	7.45	7.4-8.0
Specific conductivity	µs/cm at 25°C	260.00	420.00	370
DO saturation	(%)	50.30	62.30	60-110
Chlorophyll a	µg/L	2.50	5.30	Indeterminate
TSS	mg/L	11.60	27.40	10
Turbidity	NTU	15.10	29.00	11

Table 6.7 Site 1.7 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.17	7.54	7.4-8.0
Specific conductivity	µs/cm at 25°C	256.00	409.80	370
DO saturation	(%)	51.46	68.42	60-110
Chlorophyll a	µg/L	2.50	8.90	Indeterminate
TSS	mg/L	8.60	27.60	10
Turbidity	NTU	12.56	63.20	11

Canning Creek

Monitoring sites located within the Canning Creek Subcatchment include:

- B2G 1.11
- B2G 1.16
- B2G 1.18

Physico-chemical baseline percentiles and regional EPP (2019) WQO's are identified in Table 6.8, Table 6.9 and Table 6.10.

Table 6.8 Site 1.11 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.00	7.47	7.2-7.8
Specific conductivity	µs/cm at 25°C	218.60	290.00	200
DO saturation	(%)	38.26	68.42	60-110
Chlorophyll a	µg/L	2.50	8.90	Indeterminate
TSS	mg/L	12.60	27.60	25
Turbidity	NTU	17.00	63.20	35

Table 6.9 Site 1.16 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.30	7.66	7.2-7.8
Specific conductivity	µs/cm at 25°C	176.00	264.00	200
DO saturation	(%)	48.90	75.08	60-110
Chlorophyll a	µg/L	2.50	14.44	Indeterminate
TSS	mg/L	21.00	59.60	25
Turbidity	NTU	87.20	154.40	35

Table 6.10 Site 1.18 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.23	7.49	7.2-7.8
Specific conductivity	µs/cm at 25°C	170.00	268.40	200
DO saturation	(%)	42.70	67.92	60-110
Chlorophyll a	µg/L	2.50	6.64	Indeterminate
TSS	mg/L	14.00	34.80	25
Turbidity	NTU	55.56	144.00	35

Southern Condamine

Monitoring sites located within the Southern Condamine Subcatchment include:

- B2G 1.23
- B2G 1.24.

Physico-chemical baseline percentiles and regional EPP (2019) WQO's are identified in Table 6.11 and Table 6.12.

Table 6.11 Site 1.23 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.22	8.21	7.2-7.9
Specific conductivity	µs/cm at 25°C	210.00	290.00	170
DO saturation	(%)	68.60	113.30	60-110
Chlorophyll a	µg/L	2.50	6.80	5
TSS	mg/L	18.20	51.80	8
Turbidity	NTU	39.60	130.00	9

Table 6.12 Site 1.24 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.10	7.93	7.2-7.9
Specific conductivity	µs/cm at 25°C	166.00	250.40	170
DO saturation	(%)	34.76	72.34	60-110
Chlorophyll a	µg/L	2.50	8.70	5
TSS	mg/L	45.20	144.00	8
Turbidity	NTU	130.00	264.00	9

Central Condamine

Monitoring sites located within the Central Condamine Subcatchment include:

- B2G 1.27
- B2G 1.29
- B2G 1.30
- B2G 1.32
- B2G 1.33.

Physico-chemical baseline percentiles and regional EPP (2019) WQO's are identified in Table 6.13, Table 6.14, Table 6.15, Table 6.16 and Table 6.17.

Table 6.13 Site 1.27 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.55	8.56	7.4-8.3
Specific conductivity	µs/cm at 25°C	227.80	359.20	890
DO saturation	(%)	78.84	97.34	60-110
Chlorophyll a	µg/L	2.50	12.80	9
TSS	mg/L	25.20	68.80	25
Turbidity	NTU	13.40	86.10	25

Table 6.14 Site 1.29 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.48	7.72	7.4-8.3
Specific conductivity	µs/cm at 25°C	236.00	278.80	890
DO saturation	(%)	31.44	56.10	60-110
Chlorophyll a	µg/L	6.76	18.40	9
TSS	mg/L	15.60	42.00	25
Turbidity	NTU	22.80	72.52	25

Table 6.15 Site 1.30 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.76	8.49	7.4-8.3
Specific conductivity	µs/cm at 25°C	252.00	367.00	890
DO saturation	(%)	76.52	97.84	60-110
Chlorophyll a	µg/L	2.50	27.20	9
TSS	mg/L	20.40	65.80	25
Turbidity	NTU	11.60	90.44	25

Table 6.16 Site 1.32 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.56	8.11	7.4-8.3
Specific conductivity	µs/cm at 25°C	278.00	358.00	890
DO saturation	(%)	64.76	98.48	60-110
Chlorophyll a	µg/L	2.50	21.92	9
TSS	mg/L	15.00	54.00	25
Turbidity	NTU	11.70	54.80	25

Table 6.17 Site 1.33 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.41	8.11	7.4-8.3
Specific conductivity	µs/cm at 25°C	240.00	350.00	890
DO saturation	(%)	62.80	106.10	60-110
Chlorophyll a	µg/L	2.50	8.50	9
TSS	mg/L	15.00	34.00	25
Turbidity	NTU	7.70	66.00	25

Oakey Creek

Monitoring sites located within the Oakey Creek Subcatchment include:

- B2G 1.39
- B2G 1.40
- B2G 1.42.

Physico-chemical baseline percentiles and regional EPP (2019) WQO's are identified in Table 6.18, Table 6.19 and Table 6.20.

Table 6.18 Site 1.39 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	7.75	8.25	7.7-8.3
Specific conductivity	µs/cm at 25°C	962.00	1920.00	510
DO saturation	(%)	56.58	106.84	60-110
Chlorophyll a	µg/L	2.50	6.64	5
TSS	mg/L	13.18	42.60	14
Turbidity	NTU	11.00	43.40	13

Table 6.19 Site 1.40 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	8.27	8.54	7.7-8.3
Specific conductivity	µs/cm at 25°C	684.80	1200.00	510
DO saturation	(%)	82.92	90.80	60-110
Chlorophyll a	µg/L	2.50	3.40	5
TSS	mg/L	9.40	29.00	14
Turbidity	NTU	3.70	33.56	13

Table 6.20 Site 1.42 physico-chemical water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
pH	log [H ⁺]	8.25	8.44	7.7-8.3
Specific conductivity	µs/cm at 25°C	896.00	1328.60	510
DO saturation	(%)	85.08	105.88	60-110
Chlorophyll a	µg/L	2.10	2.50	
TSS	mg/L	2.60	20.60	14
Turbidity	NTU	1.82	12.80	13

6.2.2 Nutrient parameter baseline values

Nutrient baseline values are presented below by Subcatchment and site number. Subcatchments with site-specific nutrient baseline values include:

- Macintyre Barwon Floodplain
- Lower Macintyre Brook
- Canning Creek
- Southern Condamine
- Central Condamine
- Oakey Creek.

Macintyre Barwon Floodplain

Monitoring sites located within the Macintyre Barwon Floodplain Subcatchment include:

- B2G 1.2
- B2G 1.2R.

Nutrient percentiles and regional EPP (2019) WQO's are identified in Table 6.21 and Table 6.22.

Table 6.21 Site 1.2 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.07	0.12	0.07
FRP	mg/L	0.02	0.05	0.020
Ammonia	mg/L	0.01	0.03	0.020
Nitrate	mg/L	0.01	0.55	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.02	0.55	0.010
TKN	mg/L	0.46	0.70	-
Total N	mg/L	0.57	1.26	0.575

Table 6.22 Site 1.2R nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.05	0.12	0.07
FRP	mg/L	0.03	0.06	0.020
Ammonia	mg/L	0.01	0.02	0.020
Nitrate	mg/L	0.01	0.56	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.02	0.56	0.010
TKN	mg/L	0.10	0.90	-
Total N	mg/L	0.48	1.31	0.575

Lower Macintyre Brook

Monitoring sites located within the Lower Macintyre Brook Subcatchment include:

- B2G 1.3
- B2G 1.6
- B2G 1.7.

Nutrient percentiles and regional EPP (2019) WQO's are identified in Table 6.23, Table 6.24 and Table 6.25.

Table 6.23 Site 1.3 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.04	0.09	0.055
FRP	mg/L	0.01	0.03	0.011
Ammonia	mg/L	0.01	0.05	0.008
Nitrate	mg/L	0.01	0.20	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.01	0.22	0.018
TKN	mg/L	0.30	1.40	-
Total N	mg/L	0.60	1.40	0.710

Table 6.24 Site 1.6 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.04	0.07	0.055
FRP	mg/L	0.01	0.02	0.011
Ammonia	mg/L	0.02	0.07	0.008
Nitrate	mg/L	0.01	0.17	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.03	0.18	0.018
TKN	mg/L	0.44	1.20	-
Total N	mg/L	0.62	1.26	0.710

Table 6.25 Site 1.7 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.04	0.12	0.055
FRP	mg/L	0.01	0.01	0.011
Ammonia	mg/L	0.01	0.07	0.008
Nitrate	mg/L	0.01	0.01	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.03	0.03	0.018
TKN	mg/L	0.45	1.40	-
Total N	mg/L	0.57	1.40	0.710

Canning Creek

Monitoring sites located within the Canning Creek Subcatchment include:

- B2G 1.11
- B2G 1.16
- B2G 1.18
- B2G 1.20R2.

Nutrient percentiles and regional EPP (2019) WQO's are identified in Table 6.26, Table 6.27 and Table 6.28.

Table 6.26 Site 1.11 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.05	0.12	0.030
FRP	mg/L	0.01	0.01	0.008
Ammonia	mg/L	0.01	0.07	0.010
Nitrate	mg/L	0.01	0.01	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.02	0.03	0.006
TKN	mg/L	0.50	1.40	-
Total N	mg/L	0.60	1.40	0.520

Table 6.27 Site 1.16 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.07	0.20	0.030
FRP	mg/L	0.01	0.06	0.008
Ammonia	mg/L	0.01	0.09	0.010
Nitrate	mg/L	0.01	0.07	-
Nitrite	mg/L	0.01	0.02	-
Nox	mg/L	0.02	0.08	0.006
TKN	mg/L	0.28	1.44	-
Total N	mg/L	0.44	1.62	0.520

Table 6.28 Site 1.18 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.05	0.17	0.030
FRP	mg/L	0.01	0.07	0.008
Ammonia	mg/L	0.02	0.06	0.010
Nitrate	mg/L	0.01	0.36	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.02	0.37	0.006
TKN	mg/L	0.16	1.34	-
Total N	mg/L	0.49	1.40	0.520

Southern Condamine

Monitoring sites located within the Southern Condamine Subcatchment include:

- B2G 1.23
- B2G 1.24.

Nutrient percentiles and regional EPP (2019) WQO's are identified in Table 6.29 and Table 6.30.

Table 6.29 Site 1.23 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.07	0.15	0.045
FRP	mg/L	0.01	0.05	0.015
Ammonia	mg/L	0.02	0.08	0.006
Nitrate	mg/L	0.01	0.10	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.03	0.10	0.003
TKN	mg/L	0.10	1.00	-
Total N	mg/L	0.14	1.34	0.595

Table 6.30 Site 1.24 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.20	0.33	0.045
FRP	mg/L	0.03	0.08	0.015
Ammonia	mg/L	0.03	0.09	0.006
Nitrate	mg/L	0.01	0.06	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.02	0.12	0.003
TKN	mg/L	0.10	1.50	-
Total N	mg/L	0.10	2.76	0.595

Central Condamine

Monitoring sites located within the Central Condamine Subcatchment include:

- B2G 1.27
- B2G 1.29
- B2G 1.30
- B2G 1.32
- B2G 1.33.

Nutrient baseline percentiles and regional EPP (2019) WQO's are identified in Table 6.31, Table 6.32, Table 6.33, Table 6.34 and Table 6.35.

Table 6.31 Site 1.27 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.09	0.33	0.170
FRP	mg/L	0.03	0.14	0.020
Ammonia	mg/L	0.03	0.08	0.004
Nitrate	mg/L	0.01	0.37	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.02	0.38	0.004
TKN	mg/L	0.32	1.32	-
Total N	mg/L	0.40	1.78	0.860

Table 6.32 Site 1.29 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.73	0.87	0.170
FRP	mg/L	0.48	0.71	0.020
Ammonia	mg/L	0.04	0.07	0.004
Nitrate	mg/L	0.01	0.02	-
Nitrite	mg/L	0.01	0.02	-
Nox	mg/L	0.02	0.03	0.004
TKN	mg/L	0.34	4.28	-
Total N	mg/L	0.34	4.28	0.860

Table 6.33 Site 1.30 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.08	0.36	0.170
FRP	mg/L	0.03	0.16	0.020
Ammonia	mg/L	0.02	0.06	0.004
Nitrate	mg/L	0.01	0.36	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.02	0.37	0.004
TKN	mg/L	0.22	2.28	-
Total N	mg/L	0.50	2.88	0.860

Table 6.34 Site 1.32 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.12	0.34	0.170
FRP	mg/L	0.05	0.17	0.020
Ammonia	mg/L	0.01	0.03	0.004
Nitrate	mg/L	0.01	0.41	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.03	0.42	0.004
TKN	mg/L	0.10	1.08	-
Total N	mg/L	0.20	2.36	0.860

Table 6.35 Site 1.33 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.16	0.30	0.170
FRP	mg/L	0.08	0.22	0.020
Ammonia	mg/L	0.02	0.04	0.004
Nitrate	mg/L	0.01	0.49	-
Nitrite	mg/L	0.01	0.01	-
Nox	mg/L	0.03	0.50	0.004
TKN	mg/L	0.10	2.10	-
Total N	mg/L	0.25	2.50	0.860

Oakey Creek

Monitoring sites located within the Oakey Creek Subcatchment include:

- B2G 1.39
- B2G 1.40
- B2G 1.42.

Nutrient percentiles and regional EPP (2019) WQO's are identified in Table 6.36, Table 6.37 and Table 6.38.

Table 6.36 Site 1.39 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.04	0.09	0.110
FRP	mg/L	0.01	0.03	0.045
Ammonia	mg/L	0.02	0.05	0.010
Nitrate	mg/L	0.01	0.93	-
Nitrite	mg/L	0.01	0.02	-
Nox	mg/L	0.05	0.93	0.005
TKN	mg/L	0.10	0.54	-
Total N	mg/L	0.34	1.32	1.00

Table 6.37 Site 1.40 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.03	0.12	0.110
FRP	mg/L	0.01	0.05	0.045
Ammonia	mg/L	0.01	0.03	0.010
Nitrate	mg/L	0.10	1.74	-
Nitrite	mg/L	0.01	0.03	-
Nox	mg/L	0.34	1.84	0.005
TKN	mg/L	0.10	0.46	-
Total N	mg/L	0.82	2.18	1.00

Table 6.38 Site 1.42 nutrient water quality objectives (for slightly-moderately disturbed ecosystems)

Parameter	Measurement unit	20 th percentile	80 th percentile	Regional WQO (EPP) 2019
Total P	mg/L	0.01	0.11	0.110
FRP	mg/L	0.01	0.03	0.045
Ammonia	mg/L	0.01	0.04	0.010
Nitrate	mg/L	0.02	1.90	-
Nitrite	mg/L	0.01	0.79	-
Nox	mg/L	0.57	1.98	0.005
TKN	mg/L	0.10	0.48	-
Total N	mg/L	1.02	2.34	1.00

6.2.3 Toxicant parameter baseline values

Toxicant baseline values are presented below by Subcatchment and site number. Subcatchments with site-specific toxicant baseline values include:

- Macintyre Barwon Floodplain
- Lower Macintyre Brook
- Canning Creek
- Southern Condamine
- Central Condamine
- Oakey Creek.

Macintyre Barwon Floodplain

Monitoring sites located within the Macintyre Barwon Floodplain Subcatchment include:

- B2G 1.2
- B2G 1.2R.

Toxicant baseline percentiles and equivalent 95% species protection are identified in Table 6.39 and Table 6.40.

Table 6.39 Site 1.2 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.002	0.004	0.024
Cadmium	mg/L	0.00005	0.0001	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0022	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.0005	0.011
Zinc	mg/L	0.002	0.003	0.008
Mercury	mg/L	0.00005	0.0025	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.40 Site 1.2R toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.002	0.004	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.00050	0.0020	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.0008	0.011
Zinc	mg/L	0.002	0.003	0.008
Mercury	mg/L	0.00005	0.0025	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Lower Macintyre Brook

Monitoring sites located within the Lower Macintyre Brook Subcatchment include:

- B2G 1.3
- B2G 1.6
- B2G 1.7.

Toxicant baseline percentiles and equivalent 95% species protection are identified in Table 6.41, Table 6.42 and Table 6.43.

Table 6.41 Site 1.3 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.001	0.002	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0020	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00050	0.011
Zinc	mg/L	0.0005	0.0025	0.008
Mercury	mg/L	0.00005	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.42 Site 1.6 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.001	0.002	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0010	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00050	0.011
Zinc	mg/L	0.0005	0.0025	0.008
Mercury	mg/L	0.00005	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.43 Site 1.7 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.00100	0.00200	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0020	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00050	0.011
Zinc	mg/L	0.0005	0.0030	0.008
Mercury	mg/L	0.00005	0.00320	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Canning Creek

Monitoring sites located within the Canning Creek Subcatchment include:

- B2G 1.11
- B2G 1.16
- B2G 1.18
- B2G 1.20R2.

Toxicant baseline percentiles and equivalent 95% species protection are identified in Table 6.44, Table 6.45 and Table 6.46.

Table 6.44 Site 1.11 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.001	0.002	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0020	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00050	0.011
Zinc	mg/L	0.0020	0.0030	0.008
Mercury	mg/L	0.00005	0.00320	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.45 Site 1.16 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0012	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0020	0.0030	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00120	0.011
Zinc	mg/L	0.0020	0.0030	0.008
Mercury	mg/L	0.00005	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.46 Site 1.18 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0010	0.024
Cadmium	mg/L	0.00008	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0010	0.0030	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00023	0.011
Zinc	mg/L	0.0020	0.0025	0.008
Mercury	mg/L	0.00152	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Southern Condamine

Monitoring sites located within the Southern Condamine Subcatchment include:

- B2G 1.23
- B2G 1.24.

Toxicant baseline percentiles and equivalent 95% species protection are identified in Table 6.47 and Table 6.48.

Table 6.47 Site 1.23 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0020	0.024
Cadmium	mg/L	0.0001	0.0001	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0008	0.0030	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00005	0.011
Zinc	mg/L	0.0030	0.0040	0.008
Mercury	mg/L	0.0025	0.0078	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.48 Site 1.24 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0020	0.024
Cadmium	mg/L	0.00008	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0016	0.0030	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00023	0.011
Zinc	mg/L	0.0028	0.0050	0.008
Mercury	mg/L	0.00152	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Central Condamine

Monitoring sites located within the Central Condamine Subcatchment include:

- B2G 1.27
- B2G 1.29
- B2G 1.30
- B2G 1.32
- B2G 1.33.

Toxicant baseline percentiles and equivalent 95% species protection are identified in Table 6.49, Table 6.50, Table 6.51, Table 6.52 and Table 6.53.

Table 6.49 Site 1.27 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0007	0.024
Cadmium	mg/L	0.00008	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0016	0.0020	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00243	0.011
Zinc	mg/L	0.0020	0.0044	0.008
Mercury	mg/L	0.00152	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.50 Site 1.29 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0014	0.0030	0.024
Cadmium	mg/L	0.00008	0.00010	0.002
Chromium	mg/L	0.0005	0.0007	0.001
Copper	mg/L	0.0016	0.0032	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00603	0.011
Zinc	mg/L	0.0058	0.0084	0.008
Mercury	mg/L	0.00152	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.51 Site 1.30 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0005	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0010	0.0024	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00300	0.011
Zinc	mg/L	0.0020	0.0034	0.008
Mercury	mg/L	0.00005	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.52 Site 1.32 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0005	0.024
Cadmium	mg/L	0.0001	0.0001	0.002
Chromium	mg/L	0.0001	0.0005	0.001
Copper	mg/L	0.0005	0.0026	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00005	0.011
Zinc	mg/L	0.00005	0.00360	0.008
Mercury	mg/L	0.0025	0.0100	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.53 Site 1.33 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0005	0.024
Cadmium	mg/L	0.0001	0.0001	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0020	0.0030	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00005	0.011
Zinc	mg/L	0.0030	0.0050	0.008
Mercury	mg/L	0.0025	0.0025	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Oakey Creek

Monitoring sites located within the Oakey Creek Subcatchment include:

- B2G 1.39
- B2G 1.40
- B2G 1.42.

Toxicant baseline percentiles and equivalent 95% species protection are identified in Table 6.54, Table 6.55 and Table 6.56.

Table 6.54 Site 1.39 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0005	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0020	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00440	0.011
Zinc	mg/L	0.0025	0.0052	0.008
Mercury	mg/L	0.00005	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.55 Site 1.40 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0005	0.024
Cadmium	mg/L	0.00007	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0020	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00122	0.011
Zinc	mg/L	0.0014	0.0025	0.008
Mercury	mg/L	0.00103	0.00250	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

Table 6.56 Site 1.42 toxicant baseline percentiles and 95% species protection

Parameter	Measurement unit	20 th percentile	80 th percentile	ANZG WQO
Arsenic	mg/L	0.0005	0.0005	0.024
Cadmium	mg/L	0.00005	0.00010	0.002
Chromium	mg/L	0.0005	0.0005	0.001
Copper	mg/L	0.0005	0.0018	0.0014
Lead	mg/L	0.0005	0.0005	0.0034
Nickel	mg/L	0.00005	0.00200	0.011
Zinc	mg/L	0.0020	0.0025	0.008
Mercury	mg/L	0.00005	0.00500	0.0006a

Table note:

a* denotes (99% species protection due to bioaccumulation)

Source 95% species protection (ANZG 2018)

7 Conclusion

The interim site-specific WQOs were developed as a tool for identifying and potential issues associated with construction activities. While each stream crossing location was not assessed for water quality values, it was considered that the values presented within this report provide a proxy indication of contemporary water quality across key water crossing locations along the alignment.

It is recommended that the site-specific objectives are considered for considering impact management measures in these key locations. Where no site-specific objectives are provided, it is suggested that either regional EPP (Water and Wetland Biodiversity) objectives are utilised or consideration of proxy site-specific objectives (identified within this report) is made, with reference to stream size and location from proxy.

As such, these are not intended an assessment triggers (for compliance) but indicators of adequate or inadequate impact management measures (nor are the EPP regional WQOs). The interim water quality objectives may be supplemented, to allow for full calculation of water quality objectives, by additional water quality sampling before commencement of construction.

8 References

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Appendix A

Raw data summary

Table A1 Site 1.2 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.03	7.33	7.23	7.77
Specific conductivity (25°C)	210.80	257.33	240.00	320.00
DO saturation (%)	7.03	7.33	7.23	7.77
Chlorophyll <i>a</i>	2.50	3.53	2.50	5.00
TSS	11.60	20.85	22.00	29.20
Total P	0.07	0.09	0.09	0.12
FRP	0.02	0.04	0.04	0.05
Turbidity	12.64	24.37	21.00	32.00
Ammonia	0.01	0.02	0.02	0.03
Nitrate	0.01	0.30	0.15	0.55
Nitrite	0.01	0.02	0.01	0.01
Nox	0.02	0.32	0.17	0.55
TKN	0.46	0.62	0.60	0.70
Total N	0.57	0.92	0.80	1.26
Arsenic	0.00200	0.00320	0.00300	0.00400
Cadmium	0.000050	0.000087	0.000100	0.000100
Chromium	0.000500	0.000533	0.000500	0.000500
Copper	0.000500	0.001667	0.002000	0.002200
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000437	0.000050	0.000500
Zinc	0.002000	0.002533	0.002500	0.003000
Mercury	0.000050	0.002013	0.002500	0.002500

Table A2 Site 1.2R basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.13	7.42	7.34	7.66
Specific conductivity (25°C)	210.80	247.87	239.00	310.00
DO saturation (%)	7.13	7.42	7.34	7.66
Chlorophyll a	2.50	3.01	2.50	4.20
TSS	6.64	20.57	20.00	32.40
Total P	0.05	0.09	0.08	0.12
FRP	0.03	0.05	0.04	0.06
Turbidity	13.88	31.05	20.00	50.20
Ammonia	0.01	0.02	0.02	0.02
Nitrate	0.01	0.31	0.14	0.56
Nitrite	0.01	0.02	0.01	0.01
Nox	0.02	0.32	0.16	0.56
TKN	0.10	0.53	0.50	0.90
Total N	0.48	0.82	0.73	1.31
Arsenic	0.00200	0.00320	0.00300	0.00400
Cadmium	0.000050	0.000087	0.000100	0.000100
Chromium	0.000500	0.000533	0.000500	0.000500
Copper	0.000500	0.001367	0.001000	0.002000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000470	0.000050	0.000800
Zinc	0.002000	0.002533	0.002500	0.003000
Mercury	0.000050	0.002080	0.002500	0.002500

Table A3 Site 1.3 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.11	7.15	7.25	7.37
Specific conductivity (25°C)	210.00	320.56	345.00	406.00
DO saturation (%)	7.11	7.15	7.25	7.37
Chlorophyll a	2.50	10.04	5.15	12.00
TSS	8.00	16.23	12.00	24.00
Total P	0.04	0.08	0.06	0.09
FRP	0.01	0.01	0.01	0.03
Turbidity	7.90	22.06	12.00	35.00
Ammonia	0.01	0.04	0.03	0.05
Nitrate	0.01	0.10	0.01	0.20
Nitrite	0.01	0.01	0.01	0.01
Nox	0.01	0.12	0.03	0.22
TKN	0.30	0.82	0.80	1.40
Total N	0.60	0.92	0.80	1.40
Arsenic	0.00100	0.00147	0.00200	0.00200
Cadmium	0.000050	0.000088	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.000500	0.000969	0.000500	0.002000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000163	0.000050	0.000500
Zinc	0.000500	0.001563	0.002000	0.002500
Mercury	0.000050	0.002263	0.002500	0.002500

Table A4 Site 1.6 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.03	7.26	7.23	7.45
Specific conductivity (25°C)	260.00	343.94	355.00	420.00
DO saturation (%)	7.03	7.26	7.23	7.45
Chlorophyll a	2.50	4.65	2.50	5.30
TSS	11.60	20.87	17.00	27.40
Total P	0.04	0.06	0.04	0.07
FRP	0.01	0.01	0.01	0.02
Turbidity	15.10	23.05	18.00	29.00
Ammonia	0.02	0.05	0.05	0.07
Nitrate	0.01	0.11	0.04	0.17
Nitrite	0.01	0.01	0.01	0.01
Nox	0.03	0.12	0.06	0.18
TKN	0.44	0.82	0.85	1.20
Total N	0.62	0.91	0.99	1.26
Arsenic	0.00100	0.00134	0.00100	0.00200
Cadmium	0.000050	0.000088	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.000500	0.000813	0.000500	0.001000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000163	0.000050	0.000500
Zinc	0.000500	0.001344	0.001000	0.002500
Mercury	0.000050	0.002325	0.002500	0.002500

Table A5 Site 1.7 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.17	7.34	7.29	7.54
Specific conductivity (25°C)	256.00	340.53	340.00	409.80
DO saturation (%)	7.17	7.34	7.29	7.47
Chlorophyll a	2.50	6.66	2.50	8.90
TSS	8.60	18.21	17.00	27.60
Total P	0.04	0.05	0.04	0.12
FRP	0.01	0.01	0.01	0.01
Turbidity	12.56	26.39	16.00	63.20
Ammonia	0.01	0.04	0.04	0.07
Nitrate	0.01	0.11	0.01	0.01
Nitrite	0.01	0.04	0.01	0.01
Nox	0.03	0.15	0.09	0.03
TKN	0.45	0.73	0.80	1.40
Total N	0.57	0.84	0.80	1.40
Arsenic	0.00100	0.00141	0.00100	0.00200
Cadmium	0.000050	0.000085	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.000500	0.000824	0.000500	0.002000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000182	0.000050	0.000500
Zinc	0.000500	0.001324	0.001000	0.003000
Mercury	0.000050	0.001734	0.002500	0.003200

Table A6 Site 1.11 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.00	7.29	7.12	7.47
Specific conductivity (25°C)	218.60	259.47	270.00	290.00
DO saturation (%)	7.00	7.29	7.12	7.47
Chlorophyll a	2.50	8.94	6.65	8.90
TSS	12.60	25.84	18.00	27.60
Total P	0.05	0.09	0.06	0.12
FRP	0.01	0.01	0.01	0.01
Turbidity	17.00	51.15	25.00	63.20
Ammonia	0.01	0.04	0.02	0.07
Nitrate	0.01	0.05	0.01	0.01
Nitrite	0.01	0.01	0.01	0.01
Nox	0.02	0.06	0.03	0.03
TKN	0.50	1.25	0.80	1.40
Total N	0.60	1.29	0.86	1.40
Arsenic	0.00100	0.00160	0.00200	0.00200
Cadmium	0.000050	0.000087	0.000100	0.000100
Chromium	0.000500	0.000533	0.000500	0.000500
Copper	0.000500	0.001333	0.000500	0.002000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000303	0.000050	0.000500
Zinc	0.002000	0.002467	0.002500	0.003000
Mercury	0.000050	0.002880	0.002500	0.003200

Table A7 Site 1.16 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.30	7.51	7.54	7.66
Specific conductivity (25°C)	176.00	240.86	187.00	264.00
DO saturation (%)	7.30	7.51	7.54	7.66
Chlorophyll a	2.50	12.71	5.30	14.44
TSS	21.00	45.33	34.50	59.60
Total P	0.07	0.13	0.10	0.20
FRP	0.01	0.03	0.02	0.06
Turbidity	87.20	122.14	110.00	154.40
Ammonia	0.01	0.06	0.06	0.09
Nitrate	0.01	0.15	0.01	0.07
Nitrite	0.01	0.02	0.01	0.02
Nox	0.02	0.18	0.03	0.08
TKN	0.28	1.06	0.85	1.44
Total N	0.44	1.23	0.95	1.62
Arsenic	0.00050	0.00110	0.00050	0.00120
Cadmium	0.000050	0.000087	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.002000	0.002067	0.002000	0.003000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000970	0.000050	0.001200
Zinc	0.002000	0.002400	0.002500	0.003000
Mercury	0.000050	0.002080	0.002500	0.002500

Table A8 Site 1.18 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.23	7.38	7.36	7.49
Specific conductivity (25°C)	170.00	210.21	175.00	268.40
DO saturation (%)	7.23	7.38	7.36	7.49
Chlorophyll a	2.50	4.38	3.25	6.64
TSS	14.00	29.57	18.50	34.80
Total P	0.05	0.11	0.10	0.17
FRP	0.01	0.05	0.04	0.07
Turbidity	55.56	133.48	140.00	144.00
Ammonia	0.02	0.04	0.04	0.06
Nitrate	0.01	0.22	0.11	0.36
Nitrite	0.01	0.01	0.01	0.01
Nox	0.02	0.23	0.12	0.37
TKN	0.16	0.79	0.76	1.34
Total N	0.49	0.99	0.89	1.40
Arsenic	0.00050	0.00079	0.00050	0.00100
Cadmium	0.000080	0.000089	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.001000	0.002250	0.003000	0.003000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000361	0.000050	0.000230
Zinc	0.002000	0.002179	0.002000	0.002500
Mercury	0.001520	0.004761	0.002500	0.002500

Table A9 Site 1.20R2 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.64	8.14	8.14	8.63
Specific conductivity (25°C)	241.20	372.00	372.00	502.80
DO saturation (%)	7.64	8.14	8.14	8.63
Chlorophyll a	6.20	11.75	11.75	17.30
TSS	10.40	11.00	11.00	11.60
Total P	0.09	0.18	0.18	0.26
FRP	0.02	0.05	0.05	0.08
Turbidity	25.90	51.82	51.82	77.73
Ammonia	0.03	0.04	0.04	0.05
Nitrate	0.01	0.01	0.01	0.01
Nitrite	0.01	0.01	0.01	0.01
Nox	0.01	0.02	0.02	0.02
TKN	0.40	0.85	0.85	1.30
Total N	0.40	0.85	0.85	1.30
Arsenic	0.00140	0.00200	0.00200	0.00260
Cadmium	0.000060	0.000075	0.000075	0.000090
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.001600	0.003250	0.003250	0.004900
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000840	0.002025	0.002025	0.003210
Zinc	0.004000	0.005500	0.005500	0.007000
Mercury	0.000540	0.001275	0.001275	0.002010

Table A10 Site 1.23 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.22	7.81	7.84	8.21
Specific conductivity (25°C)	210.00	249.75	258.50	290.00
DO saturation (%)	7.22	7.81	7.84	8.21
Chlorophyll a	2.50	12.17	2.50	6.80
TSS	18.20	32.17	32.00	51.80
Total P	0.07	0.12	0.10	0.15
FRP	0.01	0.03	0.02	0.05
Turbidity	39.60	85.26	73.00	130.00
Ammonia	0.02	0.05	0.04	0.08
Nitrate	0.01	0.21	0.03	0.10
Nitrite	0.01	0.02	0.01	0.01
Nox	0.03	0.23	0.03	0.10
TKN	0.10	0.74	0.75	1.00
Total N	0.14	0.95	0.91	1.34
Arsenic	0.00050	0.00129	0.00100	0.00200
Cadmium	0.000100	0.000092	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.000800	0.002042	0.002000	0.003000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000375	0.000050	0.000050
Zinc	0.003000	0.003250	0.003000	0.004000
Mercury	0.002500	0.005592	0.002500	0.007800

Table A11 Site 1.24 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.10	7.44	7.21	7.93
Specific conductivity (25°C)	166.00	234.00	200.00	250.40
DO saturation (%)	7.10	7.44	7.21	7.93
Chlorophyll a	2.50	6.65	3.75	8.70
TSS	45.20	93.79	79.00	144.00
Total P	0.20	0.27	0.29	0.33
FRP	0.03	0.06	0.05	0.08
Turbidity	130.00	210.64	209.50	264.00
Ammonia	0.03	0.07	0.05	0.09
Nitrate	0.01	0.05	0.01	0.06
Nitrite	0.01	0.02	0.01	0.01
Nox	0.02	0.07	0.03	0.12
TKN	0.10	1.45	0.50	1.50
Total N	0.10	1.84	0.79	2.76
Arsenic	0.00050	0.00114	0.00050	0.00200
Cadmium	0.000080	0.000089	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.001600	0.002429	0.002500	0.003000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000861	0.000050	0.000230
Zinc	0.002800	0.004393	0.005000	0.005000
Mercury	0.001520	0.002654	0.002500	0.002500

Table A12 Site 1.27 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.55	8.11	8.28	8.56
Specific conductivity (25°C)	227.80	298.43	285.00	359.20
DO saturation (%)	7.55	8.11	8.28	8.56
Chlorophyll a	2.50	9.92	5.00	12.80
TSS	25.20	53.92	32.00	68.80
Total P	0.09	0.21	0.17	0.33
FRP	0.03	0.08	0.06	0.14
Turbidity	13.40	103.83	63.00	86.10
Ammonia	0.03	0.07	0.05	0.08
Nitrate	0.01	0.38	0.01	0.37
Nitrite	0.01	0.02	0.01	0.01
Nox	0.02	0.40	0.03	0.38
TKN	0.32	0.97	0.80	1.32
Total N	0.40	1.35	0.91	1.78
Arsenic	0.00050	0.00075	0.00050	0.00070
Cadmium	0.000080	0.000089	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.001600	0.001821	0.002000	0.002000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.001539	0.000050	0.002430
Zinc	0.002000	0.003107	0.002750	0.004400
Mercury	0.001520	0.004832	0.002500	0.002500

Table A13 Site 1.29 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.48	7.63	7.50	7.72
Specific conductivity (25°C)	236.00	259.25	250.00	278.80
DO saturation (%)	7.48	7.63	7.50	7.72
Chlorophyll a	6.76	12.28	13.80	18.40
TSS	15.60	29.25	27.00	42.00
Total P	0.73	0.80	0.82	0.87
FRP	0.48	0.60	0.58	0.71
Turbidity	22.80	47.95	46.50	72.52
Ammonia	0.04	0.06	0.04	0.07
Nitrate	0.01	0.01	0.01	0.02
Nitrite	0.01	0.01	0.01	0.02
Nox	0.02	0.02	0.03	0.03
TKN	0.34	2.60	1.15	4.28
Total N	0.34	2.60	1.15	4.28
Arsenic	0.00140	0.00213	0.00250	0.00300
Cadmium	0.000080	0.000088	0.000100	0.000100
Chromium	0.000500	0.000625	0.000500	0.000700
Copper	0.001600	0.002500	0.002000	0.003200
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.003788	0.000050	0.006030
Zinc	0.005800	0.006875	0.008000	0.008400
Mercury	0.001520	0.001888	0.002500	0.002500

Table A14 Site 1.30 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.76	8.16	8.26	8.49
Specific conductivity (25°C)	252.00	321.21	305.00	367.00
DO saturation (%)	7.76	8.16	8.26	8.49
Chlorophyll a	2.50	16.19	3.75	27.20
TSS	20.40	38.43	29.50	65.80
Total P	0.08	0.24	0.26	0.36
FRP	0.03	0.09	0.07	0.16
Turbidity	11.60	55.84	49.00	90.44
Ammonia	0.02	0.06	0.03	0.06
Nitrate	0.01	0.25	0.01	0.36
Nitrite	0.01	0.02	0.01	0.01
Nox	0.02	0.27	0.03	0.37
TKN	0.22	1.44	0.85	2.28
Total N	0.50	1.69	1.20	2.88
Arsenic	0.00050	0.00064	0.00050	0.00050
Cadmium	0.000050	0.000086	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.001000	0.001893	0.002000	0.002400
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.001179	0.000050	0.003000
Zinc	0.002000	0.002929	0.002500	0.003400
Mercury	0.000050	0.004157	0.002500	0.002500

Table A15 Site 1.32 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.56	7.81	7.72	8.11
Specific conductivity (25°C)	278.00	333.50	295.00	358.00
DO saturation (%)	7.56	7.81	7.72	8.11
Chlorophyll a	2.50	17.91	3.75	21.92
TSS	15.00	36.68	28.50	54.00
Total P	0.12	0.23	0.20	0.34
FRP	0.05	0.11	0.10	0.17
Turbidity	11.70	36.94	28.00	54.80
Ammonia	0.01	0.03	0.02	0.03
Nitrate	0.01	0.46	0.15	0.41
Nitrite	0.01	0.03	0.01	0.01
Nox	0.03	0.50	0.16	0.42
TKN	0.10	0.80	0.15	1.08
Total N	0.20	1.26	0.69	2.36
Arsenic	0.00050	0.00081	0.00050	0.00050
Cadmium	0.000100	0.000094	0.000100	0.000100
Chromium	0.000100	0.000500	0.000500	0.000500
Copper	0.000500	0.002188	0.002000	0.002600
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.001419	0.000050	0.000050
Zinc	0.000050	0.003188	0.003000	0.003600
Mercury	0.002500	0.005694	0.002500	0.010000

Table A16 Site 1.33 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.41	7.75	7.70	8.11
Specific conductivity (25°C)	240.00	298.36	290.00	350.00
DO saturation (%)	7.41	7.75	7.70	8.11
Chlorophyll a	2.50	5.32	2.50	8.50
TSS	15.00	28.76	27.00	34.00
Total P	0.16	0.27	0.24	0.30
FRP	0.08	0.15	0.11	0.22
Turbidity	7.70	37.70	42.90	66.00
Ammonia	0.02	0.04	0.03	0.04
Nitrate	0.01	0.43	0.01	0.49
Nitrite	0.01	0.01	0.01	0.01
Nox	0.03	0.46	0.03	0.50
TKN	0.10	1.65	0.50	2.10
Total N	0.25	2.08	1.00	2.50
Arsenic	0.00050	0.00068	0.00050	0.00050
Cadmium	0.000100	0.000095	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.002000	0.002227	0.002000	0.003000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000773	0.000050	0.000050
Zinc	0.003000	0.004045	0.003000	0.005000
Mercury	0.002500	0.002868	0.002500	0.002500

Table A17 Site 1.39 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	7.75	7.99	7.96	8.25
Specific conductivity (25°C)	962.00	1545.60	1500.00	1920.00
DO saturation (%)	7.75	7.99	7.96	8.25
Chlorophyll a	2.50	6.14	2.50	6.64
TSS	13.18	32.91	30.00	42.60
Total P	0.04	0.07	0.06	0.09
FRP	0.01	0.03	0.01	0.03
Turbidity	11.00	24.51	20.50	43.40
Ammonia	0.02	0.05	0.04	0.05
Nitrate	0.01	0.54	0.21	0.93
Nitrite	0.01	0.02	0.01	0.02
Nox	0.05	0.58	0.52	0.93
TKN	0.10	0.36	0.10	0.54
Total N	0.34	0.87	0.85	1.32
Arsenic	0.00050	0.00050	0.00050	0.00050
Cadmium	0.000050	0.000087	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.000500	0.001400	0.001000	0.002000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.001840	0.000050	0.004400
Zinc	0.002500	0.004600	0.005000	0.005200
Mercury	0.000050	0.002280	0.002500	0.002500

Table A18 Site 1.40 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	8.27	8.41	8.42	8.54
Specific conductivity (25°C)	684.80	954.00	1000.00	1200.00
DO saturation (%)	8.27	8.41	8.42	8.54
Chlorophyll a	2.50	3.00	2.50	3.40
TSS	9.40	20.33	16.00	29.00
Total P	0.03	0.08	0.05	0.12
FRP	0.01	0.03	0.03	0.05
Turbidity	3.70	26.81	8.10	33.56
Ammonia	0.01	0.02	0.01	0.03
Nitrate	0.10	0.95	0.95	1.74
Nitrite	0.01	0.14	0.01	0.03
Nox	0.34	1.10	0.96	1.84
TKN	0.10	0.35	0.30	0.46
Total N	0.82	1.41	1.20	2.18
Arsenic	0.00050	0.00050	0.00050	0.00050
Cadmium	0.000070	0.000088	0.000100	0.000100
Chromium	0.000500	0.000615	0.000500	0.000500
Copper	0.000500	0.001423	0.001000	0.002000
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000731	0.000050	0.001220
Zinc	0.001400	0.001923	0.002000	0.002500
Mercury	0.001030	0.002704	0.002500	0.002500

Table A19 Site 1.42 basic summary statistics

Parameter	20 th percentile	Mean	Median (50 th percentile)	80 th percentile
pH	8.25	8.35	8.39	8.44
Specific conductivity (25°C)	896.00	1086.59	1200.00	1328.60
DO saturation (%)	8.25	8.35	8.39	8.44
Chlorophyll a	2.10	2.32	2.50	2.50
TSS	2.60	17.38	10.00	20.60
Total P	0.01	0.06	0.04	0.11
FRP	0.01	0.02	0.01	0.03
Turbidity	1.82	14.68	5.40	12.80
Ammonia	0.01	0.02	0.02	0.04
Nitrate	0.02	0.96	0.49	1.90
Nitrite	0.01	0.32	0.01	0.79
Nox	0.57	1.32	1.27	1.98
TKN	0.10	0.47	0.20	0.48
Total N	1.02	1.72	1.50	2.34
Arsenic	0.00050	0.00050	0.00050	0.00050
Cadmium	0.000050	0.000085	0.000100	0.000100
Chromium	0.000500	0.000500	0.000500	0.000500
Copper	0.000500	0.000941	0.000500	0.001800
Lead	0.000500	0.000500	0.000500	0.000500
Nickel	0.000050	0.000682	0.000050	0.002000
Zinc	0.002000	0.002265	0.002000	0.002500
Mercury	0.000050	0.002734	0.002500	0.005000

Appendix B

Box and Whisker Plots

