APPENDIX K

Air Quality Technical Report

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

IR_1536

The Australian Government is delivering Inland Rail through the Australian Rail Track Corporation (ARTC), in partnership with the private sector.

Inland Rail Gowrie to Helidon EIS

Appendix K – Air Quality Technical Report

Australian Rail Track Corporation

Reference: 3200

Document Number:
2-0001-320-EAP-10-RP-0210_1

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Abbreviations

Abbreviation	Explanation
µm	micrometre
µg	microgram
µg/m^3	micrograms per cubic metre
AADT	Annual Average Daily Traffic
ACARP	Australian Coal Association Research Program
AERMOD	An atmospheric dispersion modelling system
Ambient Air Quality NEPM	National Environment Protection (Ambient Air Quality) Measure (Cth)
Air Toxics NEPM	National Environment Protection (Air Toxics) Measure (Cth)
Project alignment	The centreline of the G2H rail line
AMO	Aeronautical Meteorological Office
assessment domain	The assessment domain is defined as the wider regional area surrounding and including the AQIA study area
AQIA	Air quality impact assessment
AQIA study area	The study area for the assessment, defined as the area within 2 km of the alignment, the alignment being the centreline of the G2H rail line
AQMS	Air quality monitoring station
AQPSP	Air Quality Planning Scheme Policy (Brisbane City Council)
ARTC	Australian Rail Track Corporation Ltd
B2G	QLD/NSW Border to Gowrie Inland Rail project
BCC	Brisbane City Council
bhp	Brake horsepower
BoM	Bureau of Meteorology
CALMET	A diagnostic three-dimensional meteorological model, which provides input for the CALPUFF air dispersion model
CALPUFF	CALPUFF is an advanced non-steady-state air quality modelling system developed in the US
CALPOST	A post-processing package used to process the output from CALPUFF
CEMP	Construction Environmental Management Plan
CIA	Cumulative impact assessment
CO	Carbon monoxide
CSIRO	Commonwealth Scientific and Industrial Research Organisation
Cth	Commonwealth
DAWE	Commonwealth of Australia Department of Agriculture, Water and the Environment
DES	Queensland Government Department of Environment and Science
DSITI	Queensland Government Department of Science, Information Technology and Innovation (former)
DTMR	Queensland Government Department of Transport and Main Roads
EEA	European Environment Agency
EIS	Environmental Impact Statement
EMEP	European Monitoring and Evaluation Project
ENSO	El Niño-Southern Oscillation
EP Act	*Environmental Protection Act 1994* (Qld)

Abbreviation	Explanation
EP Act Air Guideline	Application requirements for activities with impacts to Air ESR/2015/1839
EP Regulation	Environmental Protection Regulation 2019 (Qld)
EPP (Air)	Environmental Protection (Air) Policy 2019 (Qld)
ERA	Environmentally relevant activities
EU	European Union
FBW	Flash butt weld
FDMS	Filter dynamics measurement systems
FFJV	Future Freight Joint Venture
FIDOL	Frequency, intensity, duration, offensiveness, location
g/s	grams per second
g/m/s	grams per metre per second
g/km/tonne	grams per kilometre per tonne
g/kWh	grams per kilowatt hour
g/t	grams per tonne
G2H	Gowrie to Helidon Inland Rail project
GDA	Geocentric Datum of Australia
GRAL	GRAL is an Austrian developed three-dimensional lagrangian dispersion model which is well suited to modelling the influence of complex terrain and buildings on pollution dispersion.
GRAMM	Prognostic meso-scale wind field model used for input into GRAL
H2C	Helidon to Calvert Inland Rail project
hp	Horsepower
IAQM	UK Institute of Air Quality Management
Inland Rail	Melbourne to Brisbane Inland Rail
kg	kilograms
kg/t	kilograms per tonne
kL	kilolitres
km	kilometre
km/h	kilometres per hour
kPa	kilopascals
kW	kilowatt
L	Litres
LGA	Local Government Areas
m	metre
m^2	square metres
m^3	cubic metres
mg	milligrams
mg/m^2	milligrams per square metre
$mg/m^2/day$	milligrams per square metre per day
MEI	Multivariate ENSO Index
mg/L	milligrams per litre
MNES	Matters of National Environmental Significance
NEPM	National Environment Protection Measure

Abbreviation	Explanation
NHMRC	National Health and Medical Research Council
NO	Nitric oxide
NO_2	Nitrogen dioxide
NO_x	Nitrogen oxides
NPI	National Pollutant Inventory
NSW	New South Wales
NSW EPA	New South Wales Environmental Protection Authority
O_3	Ozone
OLM	Ozone limiting method
ONI	Oceanic Niño Index
PAHs	Polycyclic aromatic hydrocarbons
PEA	Preliminary Environmental Assessment
PM_{10}	Particulate matter less than 10 micrometres in diameter
$PM_{2.5}$	Particulate matter less than 2.5 micrometres in diameter
PPM	Parts per million
QLD	Queensland
QLD EPA	Queensland Environmental Protection Agency
QLUMP	Queensland Land Use Mapping Program
QR	Queensland Rail
SA EPA	South Australian Environmental Protection Authority
SEQ	South East Queensland
SOI	Southern Oscillation Index
SO_2	Sulfur dioxide
SRTM	Shuttle Radar Topography Mission
the proponent	Australian Rail Track Corporation Ltd
TAPM	Prognostic meteorological model used to provide input into CALMET
TBM	Tunnel Boring Machine
TEC	Threatened Ecological Community
TEOM	Tapered element oscillation microbalance
THC	Total hydrocarbons
ToR	Terms of Reference
Trackout	Trackout refers to the transport of dust and dirt from a construction/demolition site onto the public road network, where it may be deposited and then re-suspended by vehicles using the network. For the purpose of this assessment, dust generated by vehicles on unsealed roads has also been included in trackout.
TSP	Total suspended particulates
UQ	University of Queensland
USA	United States of America
US EPA	US Environmental Protection Agency
Vic EPA	Environment Protection Authority Victorian
VOCs	Volatile organic compounds
WA EPA	Western Australia Environmental Protection Authority
Y2G	Yelarbon to Gowrie

Executive summary

Future Freight Joint Venture (FFJV) was engaged by Australian Rail Track Corporation (ARTC) to prepare an Environmental Impact Statement (EIS) for the Gowrie to Helidon section of Inland Rail (the Project).

ARTC proposes to construct and operate the Project which consists of approximately 28 kilometres (km) of single track dual gauge railway with three crossing loops to accommodate double stack freight trains up to 1,800 metres (m) long. It will also involve the construction of an approximately 6.24 km long undrained tunnel through the Toowoomba Range to facilitate the required gradient across the undulating topography.

Key elements of the air quality impact assessment (AQIA) include:

- Review of relevant legislation, historical meteorological data and ambient air quality monitoring data
- Generation of specific meteorology for the AQIA study area
- Primarily quantitative impact assessment for the operation phase to estimate potential air quality impacts, including cumulative air quality impacts
- Qualitative assessment of potential air quality impacts during construction of the Project
- Identification of mitigation measures
- Assessment of the residual impact with the inclusion of the identified mitigation measures.

For the purpose of the assessment, the AQIA study area has been defined as the area within 2 km of the Project alignment, with the alignment being the centreline of the proposed rail line. The assessment domain is defined as the regional area surrounding and including the AQIA study area. Air quality and meteorological monitoring data from locations outside the AQIA study area but within the assessment domain have been considered in this assessment.

The Project disturbance footprint includes the permanent disturbance footprint and the extended temporary footprint required for the construction of the Project.

A survey of sensitive receptors (e.g. residential dwellings and select agricultural land uses) in the AQIA study area has been undertaken via desktop review of aerial imagery. A total of 2,829 sensitive receptors have been considered in the AQIA assessment for the Project.

In addition to assessing impacts to residential dwellings and agricultural land uses, the assessment of the operation phase has also considered the potential for impacts to the health and biodiversity of ecosystems.

The assessment of impacts from the construction of the Project has been undertaken following the UK Institute of Air Quality Management ‘Guidance on the assessment of dust from demolition and construction’ (UK IAQM 2014). This document provides a qualitative risk assessment process for the potential impact of dust generated from demolition, earthmoving, and construction activities. In absence of Australian specific guidance, this methodology is considered the most appropriate method for the assessment of construction impacts. Detailed dispersion modelling of construction is not typically undertaken as construction activity is difficult to forecast accurately. Similarly, emissions are typically well controlled by standard construction practices and mitigation controls. The qualitative assessment method applied for the assessment of the construction phase impacts is considered appropriate for the Project and is consistent with industry standard methodology.

An air quality dispersion modelling assessment for the operational phase was completed based upon methodologies and guidance presented in the following guidelines:

- Application requirements for activities with impacts to air (EP Act Air Guideline) (Department of Environment and Science (DES) 2017), a guideline document under the QLD *Environmental Protection Act 1994* (EP Act) to support applications for activities with impacts to air.
- Approved methods for the modelling and assessment of air pollutants in New South Wales (NSW Environmental Protection Authority (NSW EPA) 2016), which provides statutory methods for modelling and assessing emissions of air pollutants in NSW.

- Generic Guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion into the Approved methods for the modelling and assessment of air pollutants in New South Wales (Barclay & Scire 2011), which provides detailed guidance on selection of CALPUFF modelling variables.

Meteorological data used in the assessment was derived in accordance with the aforementioned guidance from The Air Pollution Model (TAPM) developed by the Commonwealth Scientific and Industrial Research Organisation (CSIRO) (2008) and supplemented with historical data from a number of Bureau of Meteorology (BoM) meteorological monitoring stations in the AQIA assessment domain. Dispersion modelling of pollutants was then completed utilising CALPUFF with meteorology refined using CALMET.

In order to quantify emissions during operation of the Project an emissions inventory was developed. The key pollutants of interest from the emissions from diesel locomotives and fugitive coal dust included nitrogen oxides (NO_x), particulates less than 10 micrometres in diameter (PM_{10}), particulates less than 2.5 micrometres in diameter ($PM_{2.5}$), and total suspended particulates (TSP).

The assessment of operational impacts has considered both the forecast peak and typical train volumes for the year 2040, which represents the future operational year with highest rail traffic. From these forecast train volumes the potential worst-case pollutant concentrations were predicted across the AQIA study area. The predicted air quality concentrations and deposition rates were compared to Project air quality goals that were adopted considering the EP Act, the Environmental Protection (Air) Policy 2019 (EPP (Air)), National Environment Protection (Ambient Air Quality) Measure (Ambient Air Quality NEPM) and guidelines commonly recommended by DES. The environmental values which are protected by the air quality goals adopted for the Project include health and wellbeing (human), the health and biodiversity of ecosystems, and the aesthetics of the environment.

The methodology adopted for the assessment is conservative and is considered likely to over-estimate impacts, as is typically required for AQIAs. A number of assumptions have been made in the assessment, including the following key assumptions:

- Emission factors for the locomotives have been adopted from the United States Environmental Protection Agency (US EPA) (US EPA 2009) and the European Monitoring and Evaluation Program/European Environment Agency (EMEP/EEA) (EMEP/EEA 2016a and 2016b).
- The diesel locomotive particulate fraction for $PM_{2.5}$ was assumed to be 96 per cent of the PM_{10} emission rates as indicated in the National Pollutant Inventory (NPI) Emissions estimation technique manual for Railway Yard Operations (NPI 2008), which is considered the most accurate reference for particulate emissions from locomotives.
- Concentrations of TSP, PM_{10}, $PM_{2.5}$ and levels of deposited dust have been predicted with and without veneering to coal wagons. Application of veneer to coal wagons is expected to reduce emissions in the order of 75 to 85 per cent. It has been conservatively assumed that fugitive coal dust emissions will be reduced by 75 per cent based on field trials (Connell Hatch 2008).
- The $PM_{2.5}$ emission rate from fugitive coal dust is considered to be 15 per cent of the PM_{10} emission rates based on the particle size distributions for mechanically generated emissions from aggregate and unprocessed ores published in the US EPA Compilation of Air Pollutant Emission Factors (US EPA 1998). Particle size distribution data is not provided for coal, but size distributions for aggregate and unprocessed ores is considered acceptable in lieu of specific data for coal.
- Coal dust emissions were calculated from an assumed average speed which resulted in an effective wind speed over the coal wagons of 80 km/h for the entire Project alignment, with the exception of travel through the Toowoomba Range Tunnel.
- Emissions from the tunnel portals have been assessed based upon operational rail modelling for train travel, which specified tunnel travel speeds and locomotive power used to traverse the Toowoomba Range tunnel.
- Nitrogen dioxide (NO_2) concentrations were derived from modelled results utilising the ozone (O_3) limiting method (OLM) as per Approved methods for the modelling and assessment of air pollutants in New South Wales (NSW EPA 2016). Background NO_2 and O_3 concentrations for the AQIA study area have been assumed based on measured concentrations from the DES Mutdapilly air quality monitoring station.

- The study assumes low sulfur content fuel as per the requirements of the *Fuel Quality Standards Act 2000* (Commonwealth (Cth)) and the Fuel Standard (Automotive Diesel) Determination 2001 (Cth). The regulation of low sulfur content fuel in Australia has significantly decreased the generation and concentrations of sulfur dioxide (SO_2) near transport sources and concentrations are typically well below the relevant air quality objectives. Due to the low likelihood of significant impact, SO_2 has not been considered in this assessment.

Qualitative assessment of the construction of the Project determined that without mitigation there is an anticipated medium risk of impact from dust deposition, and a high risk of impact to human health. Mitigation strategies such as the application of water, separation distances for significant emission sources within laydown areas (e.g. fuel storage and batching plants), and controls for exposed areas including stockpiles, have been proposed to minimise potential impacts from construction of the Project. The residual impact with the implementation of these mitigation strategies has been assessed to be medium for trackout impacts to human health, and low for all other sources. With the implementation of mitigation measures it is expected that the impact of construction on sensitive receptors will not be significant.

The assessment of the operational phase of the Project has determined that compliance is predicted for all air quality goals at all sensitive receptors for the peak and typical scenarios with the exclusion of a single receptor, receptor R_898. Receptor R_898 is a residential dwelling located within the permanent disturbance footprint of the Project near the western portal of the Toowoomba Range tunnel and adjacent to the proposed western tunnel portal crossing loop. It is expected all sensitive receptors within the permanent disturbance footprint will be acquired pursuant to the land acquisition process. With the expectation that receptor R_898 is acquired, the operation of the Project is expected to comply with the adopted air quality goals at all remaining sensitive receptors and is not expected to adversely impact environmental values relevant to human receptors, including human health and the aesthetic environment.

The assessment of the operational phase of the Project for residual impacts to water quality in water tanks has predicted compliance with the drinking water guideline values prescribed by the National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines (2018). For the pollutant species of interest, pollutant concentrations in water tanks were predicted to be less than 1 per cent of the guideline values at all sensitive receptors. The methodology applied for the assessment of impacts to water tanks is also applicable for assessment of impacts to water quality for dams. Therefore, assuming that the methodology assumptions with respect to collection surface area and receiving water volume are comparable, compliance with the drinking water guideline values would also be expected for dams. This is of note as the Project alignment traverses between two dams associated with the Withcott Seedlings operation; while no other dams are present within 100 m of the Project alignment.

Modelling predictions for the peak and typical volume scenarios have been reviewed to determine if the annual average NO_2 air quality goal of 33 µg/m^3, set for the protection of the environmental value of the health and biodiversity of ecosystems, is exceeded within the AQIA study area. Based on the limited areas outside the Project disturbance footprint at which the annual average NO_2 air quality goal is predicted to be exceeded and the level of disturbance (current and required for the Project) for these areas, it is considered unlikely that significant impacts to ecological receptors will occur as a result of the operation of the Project. Therefore, the operation of the Project is not expected to significantly impact the environmental value of the health and biodiversity of ecosystems.

Tunnel ventilation design and the assessment of in-tunnel air quality has been undertaken as part of the design work for the Project. One of the primary objectives of the tunnel ventilation system design was maintenance of acceptable air quality inside the tunnel and at the tunnel portals. Tunnel ventilation system design was undertaken considering normal, purge, emergency and maintenance operations for express, superfreighter, coal and passenger train types travelling both uphill and downhill in the tunnel.

The ventilation system has been designed such that the tunnel will undergo a purge cycle following train passages, to ventilate the tunnel of any residual pollutants and heat and ensure a suitable environment prior to the next train entering the tunnel. Tunnel ventilation scenarios based on emissions rates from various locomotives travelling through the tunnel were modelled considering the purging methodology of the tunnel. The purging methodology for the tunnel has been incorporated in the dispersion modelling of emissions from the tunnel portals. Tunnel ventilation design has been undertaken for the Toowoomba Range tunnel focusing on maintaining the acceptability of air quality inside the tunnel considering human exposure and locomotive manufacturer requirements for air intake quality. The key pollutants considered were CO, NO_2 and NO. The adopted in-tunnel air quality criteria are consistent with in-tunnel air quality guideline values adopted elsewhere in Australia and internationally.

Mitigation measures are proposed for the construction and operational phases of the Project based on the results of the assessment. Mitigation measures for the construction phase are proposed for each construction activity and include:

- Water sprays to reduce dust emissions from the excavation and disturbance of soil and materials, vehicle travel on unsealed roads, and loading and unloading of materials
- Rehabilitation of exposed areas
- Minimum separation distances for the location of fuel storage tanks.

For several of the mitigation measures proposed, the expected control efficiency (emission reduction percentage) has been nominated based on guidance provided in the NPI Emissions estimation technique manual for Mining (NPI 2012).

For the construction of the Project, dust sources will be variable in nature and proximity to sensitive receptors and construction mitigations need to address this variability. For a number of emission sources identified there are multiple available mitigation measures. The exact method of mitigation implemented will be determined during construction phase planning and following confirmation of the availability and suitability of water supply sources. During the detailed phase of construction planning, a Construction Environment Management Plan (CEMP) will be developed. Mitigation measures proposed for the construction phase of the Project are detailed in the draft Outline Environmental Management Plan (draft Outline EMP) (refer EIS Chapter 23: Draft Outline Environmental Management Plan). In addition to mitigation measures, methods for the monitoring, reporting and auditing of compliance with the Projects air quality goals have also been proposed for both the construction and operational phases.

1 Introduction

Future Freight Joint Venture (FFJV) was engaged by Australian Rail Track Corporation (ARTC) to prepare an Environmental Impact Statement (EIS) for the Gowrie to Helidon (G2H) section of Inland Rail (the Project) in accordance with the Terms of Reference (ToR) and relevant guidelines.

To supplement the EIS, an air quality impact assessment (AQIA) has been undertaken to determine whether commissioning, construction, operation and decommissioning of the Project are predicted to comply with the relevant ambient air quality standards and goals. This report outlines the current regulatory system relevant to air quality management, the baseline air quality and meteorological conditions in the AQIA study area, and the methodology used to carry out the assessment. For the purpose of the assessment, the AQIA study area is defined as the area within 2 km (2 km either side) of the alignment, with the alignment being the centreline of the Project rail line. For the purpose of the assessment, the assessment domain is defined as the regional area surrounding and including the AQIA study area.

The Project disturbance footprint for the Project includes the permanent disturbance footprint and the extended temporary footprint required for the construction of the Project.

This report outlines the results of the assessment of the construction and operation phases of the Project and proposes mitigation measures and strategies to minimise the impact of the Project on sensitive receptors with respect to relevant environmental values. This report supports the air quality chapter presented within the EIS for the Project.

The Project is one of 13 projects making up the approximately 1,700 km Inland Rail Program. The Project is predominantly a greenfield rail corridor approximately 28 km in length that will connect to the Border to Gowrie section (B2G) to the west, and Helidon to Calvert section (H2C) to the east.

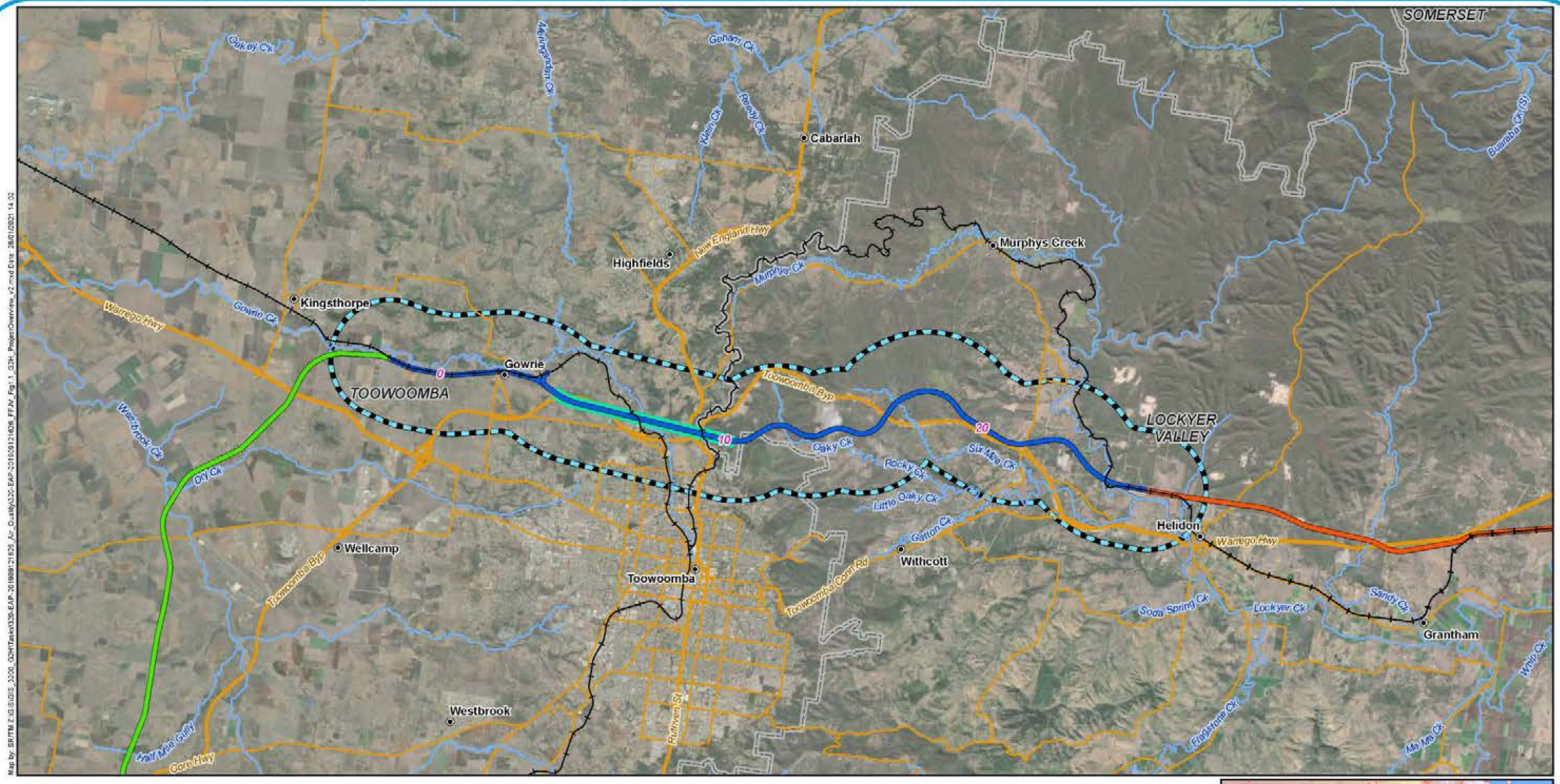
Figure 1.1 presents the Project location and the location of adjoining sections of the Inland Rail Program.

1.1 Project location

The Project begins approximately 3.7 km west of Gowrie at Charlton and is co-located (to the south) with the existing Queensland Rail (QR) West Moreton System rail corridor heading east for approximately 4.8 km. The Project then diverges from the existing rail corridor to the south-east, traversing rural/pastoral land, before passing into the western tunnel portal, within the vicinity of Boundary Street and the Toowoomba Bypass interchange at Gowrie Junction. It then continues for 6.24 km within an undrained tunnel through the Toowoomba Range, passing under the localities of Cranley, Mount Kynoch and Ballard and emerging on the eastern side of the Toowoomba Range approximately 1.6 km south-east of Mt Kynoch. The eastern tunnel portal is in a rural area predominantly consisting of natural vegetation, while an intermediate ventilation shaft (to draw air into the tunnel) is proposed for Cranley.

The Project then crosses through the northern edge of an area of Commonwealth land, previously utilised by the Department of Defence. Continuing east, the Project alignment passes through the northern area of Withcott, and traverses areas of native vegetation and rural properties, with crossings over the valleys of Oaky Creek, Six Mile Creek and the Toowoomba Bypass. It then continues from Postmans Ridge to the Helidon area, crossing Murphys Creek Road, Lockyer Creek, and the existing QR West Moreton System rail corridor before tying into the northern side of the existing West Moreton System rail corridor north-west of Helidon.

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Legend

- 5 Chainage (km)
- Localities
- B2G project alignment
- G2H project alignment
- H2C project alignment
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Air Quality study area
- Local Government Areas



A3 scale: 1:140,000

0 1 2 3 4 5km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 11/03/2020 Version: 0

Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 1.1: Project overview

1.2 Assessment scope

The scope of the AQIA included the following:

- Review of relevant legislation and policy
- Identification of the relevant ambient air quality objectives or goals, including those designated for the protection of human health and wellbeing
- Discussion of local meteorology and climate conditions based on available Bureau of Meteorology (BoM) and DES monitoring data
- Discussion of existing air quality based on available DES monitoring data
- Identification of potential sources of air emissions from surrounding land uses
- A qualitative risk assessment of emissions during the construction phase
- A quantitative dispersion modelling assessment of operational phase emissions considering peak and typical train movements for the year 2040
- Identification of mitigation measures
- Assessment of the residual impact with the inclusion of the identified mitigation measures.

The AQIA has been prepared with consideration given to the following guidelines:

- Application requirements for activities with impacts to air ESR/2015/1839 (EP Act Air Guideline), a guideline document under the QLD *Environmental Protection Act 1994* (EP Act) to support applications for activities with impacts to air (DES 2017).
- Approved methods for the modelling and assessment of air pollutants in New South Wales, New South Wales Environmental Protection Authority (NSW EPA) (NSW EPA 2016), which provides statutory methods for modelling and assessing emissions of air pollutants in NSW, but is relevant and applicable for assessments in Queensland (QLD).
- Generic Guidance and Optimum Model Settings for the CALPUFF Modelling System for Inclusion into the Approved methods for the modelling and assessments of air pollutants in New South Wales (Barclay & Scire 2011), which is written for NSW but is relevant and applicable for QLD.
- Guidance on the assessment of dust from demolition and construction, United Kingdom (UK) Institute of Air Quality Management (IAQM) (UK IAQM 2014). This document provides a qualitative risk assessment process for the potential impact of dust generated from demolition, earthmoving, and construction activities. In the absence of Australian specific guidance, this methodology is considered the most appropriate for the assessment of construction impacts.

This report addresses the ToR that was issued for the Project in August 2017. The ToR states that the assessment should follow the QLD Environmental Protection (Air) Policy 2008. However, this document was updated in 2019 to the Environmental Protection (Air) Policy 2019 (EPP (Air)). It includes amendments to air quality objectives and thus has been used for the AQIA. The ToR relevant to the AQIA are outlined in Table 1.1.

Table 1.1 Terms of Reference

Terms of reference requirements		Where addressed
Existing environment		
11.124	Describe the existing air quality that may be affected by the Project in the context of environmental values.	Sections 2, 3 and 4 EIS Chapter 12: Air quality, Sections 12.4.3 and 12.4.4
11.125	Discuss the existing local and regional air shed environment.	Section 4 EIS Chapter 12: Air quality, Section 12.4.4

Terms of reference requirements		Where addressed
11.126	Provide baseline data on local meteorology and ambient levels of pollutants for modelling of air quality. Parameters should include air temperature, wind speed and directions, atmospheric stability, mixing depth and other parameters necessary for input to the model.	Section 5 EIS Chapter 12: Air quality, Section 12.4.4
11.127	The assessment of environmental values must describe and map at a suitable scale the location of all sensitive air receptors adjacent to all Project components. An estimate of typical background air quality levels should be based on surveys at representative sites where data from existing DEHP monitoring stations cannot be reliably extrapolated.	Section 4 EIS Chapter 12: Air quality, Section 12.4.4 and Figure 12.3
Impact assessment		
11.128	Describe the characteristics of any contaminants or materials that may be released as a result of the construction or operations of the Project, including point source and fugitive emissions. Emissions (point source and fugitive) during construction, commissioning and operations are to be listed.	Sections 2, 5 and 6 EIS Chapter 12: Air quality, Sections 12.4.2, 12.6.1, 12.6.2 and 12.6.2
11.129	The relevant air quality goals or objectives that will be adopted for the assessment should be clearly outlined as a basis of the assessment of impacts on air.	Section 3.6 EIS Chapter 12: Air quality, Section, 12.4 and 12.4.3
11.130	The assessment of impacts on air will be in accordance with the EP Act, EP Regulation and Environmental Protection (Air) Policy 2008 (EPP (Air)) and reference to appropriate to Australian Standards.	Sections 3 and 5 EIS Chapter 12: Air quality, Sections 12.4 and 12.4.3
11.131	Predict the impacts of the releases from the activity on environmental values of the receiving environment using recognised quality assured methods. The description of impacts should take into consideration the assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. The impact prediction must: (a) address residual impacts on the environmental values (including appropriate indicators and air quality objectives) of the air receiving environment, with reference to the air environment at sensitive receptors. This should include all relevant values potentially impacted by the activity, under the EP Act, EP Regulation and EPP (Air) (b) address the cumulative impact of the release with other known releases of contaminants, materials or wastes associated with existing major Projects and/or developments and those which are progressing through planning and approval processes and public information is available (c) quantify the human health risk and amenity impacts associated with emissions from the Project for all contaminants covered by the National Environmental Protection (Ambient Air Quality) Measure or the EPP (Air).	Sections 6 to 8 EIS Chapter 12: Air quality, Sections 12.4, 12.4.3, 12.6 and 12.7
Mitigation measures		
11.132	Describe the proposed mitigation measures to manage impacts to air quality, including potential impacts from coal trains, and the predicted level of effectiveness of the mitigation measures.	Sections 5 and 9 EIS Chapter 12: Air quality, Sections 12.6 and 12.8
11.133	Describe how the proposed activity will be consistent with best practice environmental management. Where a government plan is relevant to the activity or site where the activity is proposed, describe the activity's consistency with that plan.	Section 9 EIS Chapter 12: Air quality, Section 12.8
11.134	Describe any expected exceedances of air quality goals or criteria following the provision and/or application of mitigation measures, and how any residual impacts would be addressed.	Sections 7, 8 and 9 EIS Chapter 12: Air quality, Section 12.9
11.135	Describe how the achievement of the objectives would be monitored, audited and reported, and how corrective actions would be managed.	Section 9.4 EIS Chapter 12: Air quality, Section 12.8.4
Climate		
11.162	Describe the climate patterns with particular regard to discharges to water and air and the propagation of noise related to the project.	Sections 4.4.8 and 5.3.2.8 EIS Chapter 12: Air quality, Sections 12.3.5.4 and 12.6.3.3

1.3 Report structure

This technical report will accompany the EIS for the Project and focuses on the AQIA requirements of the ToR. The structure of this technical report is as presented in Table 1.1.

Table 1.2 Report structure

Content	Reference	ToR section addressed
Introduction	Section 1	-
Project description	Section 2	11.124 11.128
Relevant legislation	Section 3	11.124 11.129 11.130
Existing Environment	Section 4	11.124 11.125 11.127
Assessment methodology	Section 5	11.126 11.128
Construction phase impact assessment	Section 6	11.128 11.131
Operation phase impact assessment	Section 7	11.131
Cumulative risk impact assessment	Section 8	11.131
Mitigation and management measures	Section 9	11.132 11.133 11.135
Residual impact assessment	Section 10	11.134
Conclusion	Section 11	-
References	Section 12	-
Meteorological data	Appendix A	-
Sensitive receptor maps	Appendix B	11.127
Dispersion model details	Appendix C	-
NO_x to NO_2 conversion	Appendix D	-
Detailed modelling results	Appendix E	-
Example CALPUFF input file	Appendix F	-

2 Project description

2.1 Overview

ARTC proposes to construct and operate the Project which consists of approximately 28 km of new railway, three crossing loops, and a tunnel approximately 6.24 km long through the Toowoomba Range. The Project alignment will generally follow the Gowrie to Grandchester future State transport corridor, which was protected under the *Transport Planning and Coordination Act 1994* (Qld) in 2005.

The key components of the Project include:

- Single track dual gauge rail line approximately 28 km in length. The line will include three crossing loops to ultimately accommodate trains up 3,600 metres (m) long based on business needs, but initially constructed for 1,800 m long train sets.
- The Project alignment is co-located with existing QR West Moreton System rail corridor for approximately 5.6 km. This includes approximately 4.8 km co-located with the Western Line (Toowoomba to Dalby section of the West Moreton System rail corridor) and 800 m co-located with the Main Line (Rosewood to Toowoomba section of the West Moreton System rail corridor).
- The length of the Toowoomba Range tunnel is approximately 6.24 km, however, with the tunnel ventilation buildings at each portal the entire length of the enclosed volume of the tunnel is 6.35 km. The free cross-sectional area of the tunnel is 73 m^2. The portal doors at each end of the tunnel have an area of 60 m^2. The gradient of the tunnel is 1.55 per cent, along with the rest of the alignment between the eastern tunnel portal and Lockyer Creek (i.e. approximately 22 km of the alignment is at a 1.55 per cent gradient).
- The ventilation system for the Toowoomba Range tunnel has been designed such that locomotive emissions which occur within the tunnel are exhausted via the tunnel portals rather than via an elevated ventilation outlet. The Toowoomba Range tunnel design includes an intermediate ventilation shaft and above ground purging systems and equipment at Cranley (Ch 6.83 km) to deliver fresh air from the surface to the tunnel below, with this intake air purging the tunnel (and the train emissions) outward from the tunnel in each direction to the portals. The intermediate ventilation shaft of the tunnel is located approximately 2,700 m from the western tunnel portal, and 3,650 m from the eastern tunnel portal. An intermediate door is provided in the tunnel at the location of the intermediate ventilation shaft to facilitate staged purging of the tunnel. Locomotive emissions which occur within the tunnel will not be emitted from the intermediate ventilation shaft with the exception of emergency situations.
- Bridges and viaducts will accommodate topography and crossings of waterways and other infrastructure. A total of 13 new bridge and viaduct structures (10 viaducts and three bridges) will be constructed. The bridges are of various lengths and spans to suit the Project alignment and topography, with the total length of rail and road bridges totalling approximately 6.7 km.
- Ties into the existing QR West Moreton System rail corridor at the western and eastern extents of the Project, allowing access between the QR and ARTC networks through the Toowoomba Range. A spur line tying into the West Moreton System east of Gowrie allows traffic to move into or out of Toowoomba via the Project alignment.
- Three crossing loops located at the eastern and western Toowoomba Range tunnel portals and at Postmans Ridge
- The construction of associated rail infrastructure including maintenance sidings and signalling infrastructure to support the train control system
- Rail crossings including grade separations/road overbridges, occupational/private crossings, and fauna crossing structures
- Significant embankments and cuttings along the length of the alignment

- Ancillary works including road and public utility crossings and realignments
- Construction workspace and access roads.

2.2 Construction

Subject to approval of the Project, construction is planned to start in 2022 and is expected to be completed and operational by 2027. Construction work would be undertaken during the following primary Project construction hours:

- Surface works will occur Monday to Friday – 6.30 am to 6.00 pm, and Saturday – 6.30 am to 1.00 pm. Surface works may occur at some locations on Monday to Friday between the hours of 6.00pm to 10.00pm if compliance with construction noise criteria can be achieved.
- Tunnelling activities, cut and fill material haulage and materials and equipment delivery will proceed on a 7 day/24 hour basis subject to construction noise limitations
- Track possession activities will occur in accordance with the hours of work prescribed by the rail infrastructure manager (i.e. QR). Track possessions will generally be allocated over weekend periods, with extended track possessions occurring over holiday or non-seasonal periods (i.e. outside of grain movement periods).
- Blasting (if required) will only occur Mondays to Saturdays during the hours of 7.30 am to 4.30 pm, and not on Sundays or public holidays
- Works outside of standard construction hours will occur throughout the duration of the construction program and will involve:
  - Track works including tamping, ballast profiling, earthworks and formation works
  - Delivery of concrete, steel, and other construction materials delivered to site by heavy vehicles
  - Movements of heavy plant and materials. Arrival and departure of construction staff during shift change-overs
  - Roadworks to arterial roads
  - Traffic control crews, including large truck mounted crash attenuator vehicles, medium rigid vehicles, and lighting towers
  - Incident response including tow-trucks for light, medium, and heavy vehicles
  - Alternative construction rosters to suit delivery and industrial relations issues may be investigated by the construction contractor
  - Various low intensity activities.

For the purpose of this assessment it has been assumed that the following activities will occur during the construction of the Project:

- Site preparation including site clearance, establishment of site laydowns and compounds and facilities, installation of temporary and permanent fencing, installation of drainage and water management controls, and construction of site access including temporary haul roads and roads which will form part of the rail maintenance access road.
- A total of 24 laydown areas between 6,500 m^2 to 338,000 m^2 in area will be established to support construction
- Clearing will occur utilising dozers, chainsaws, excavators, trucks and similar equipment. All groundcover, topsoils, and other organic and/or unsuitable material will be stripped from the Project disturbance footprint (excluding the tunnel and no-go zones). Wherever possible and appropriate, such material will be stockpiled and recycled within the Project disturbance footprint.

- The construction of the rail formation will require earthworks and engineered fill, including the use of suitable material won from site, to provide a surface designed for the rail construction and operation. The earthworks will be made up of constructing batters, embankments, excavating cuttings, bridge/viaduct abutments and road realignment formations. This work will be carried out using heavy earthmoving plant and equipment and in some cuttings, there is the potential use of explosives.
- Thirteen cuts, in the range of 6.65 km total length, with a maximum cut depth of 45.7 m, along the Project disturbance footprint are required to maintain the required track elevations for the proposed rail line. The total volume of cuttings across the Project disturbance footprint, excluding the tunnel, has been estimated to be approximately 2,380,000 m^3.
- Approximately 2,120,000 m^3 of fill material will be needed for the construction of embankments for the Project with a total length of approximately 15.4 km with a maximum embankment height of 33.3 m
- Non-rippable rock (rock that is not able to be broken down using mechanical means) will be broken via drill and blast or by hydraulic rock-breakers. Significant volumes of non-rippable rock are anticipated within some of the cuttings along the alignment, particularly through the Toowoomba Range. The extent to which drilling and blasting will be required is subject to further geotechnical investigation. Based on the preliminary geotechnical information, it is anticipated that blasting may be required in the more significant cuttings (e.g. at the western tunnel portal).
- Construction of drainage infrastructure including cut off drains, table drains and culvert structures
- Construction/installation of bridges and viaducts. The Project requires 13 new bridge and viaduct structures comprising 10 viaducts and three bridges totalling approximately 6.7 km in length. As a number of these structures also interact with public roads and rail, the construction will be subject to traffic management and temporary works restrictions to ensure the safety of the travelling public and workforce.
- The proposed tunnel will be constructed through the Toowoomba Range and will be approximately 6.24 km long and has a maximum cover of approximately 220 m at Mount Kynoch. The tunnel has a bored diameter of approximately 12.2 m and a finished internal diameter of approximately 11 m. The construction methodology is based on a shielded Tunnel Boring Machine (TBM). Though a cut and cover and mined tunnel (roadheader and drill and blast) will initially be used at the eastern tunnel portal prior to the TBM. The TBM launching facility and support operations will be located at the western tunnel portal, with the tunnel construction activities.
- An intermediate ventilation shaft will be constructed at Cranley, using conventional shaft sink construction method. The shaft will be approximately 17 m internal diameter and 100 m deep will be excavated prior to the tunnel construction.
- Excess material from the tunnel, including the intermediate ventilation shaft, is estimated to be approximately 730,000 m^3 and will be stockpiled near the western tunnel portal. The stockpile will be stabilised and profiled and will act as a barrier (e.g. noise and visual amenity). Some material may also be used on adjacent projects including the B2G project and InterLinkSQ.
- Onsite crushing and screening for the processing of structural fill is proposed to be undertaken at two laydown areas
- Construction of the Toowoomba Range tunnel and tunnel maintenance facilities, administration and amenities buildings, fire management facilities, water treatment plants, car and truck parking, substation and bulk fuel provisioning and storage areas.
- Two ventilations buildings are required at each of the tunnel portals. The free cross-sectional area of the tunnel is 73 m^2, but the tunnel portal openings are 60 m^2. Material generated by tunnel excavation will be stockpiled at designated laydown areas near the tunnel portals. An intermediate ventilation shaft is required to operate as an air intake for mechanical ventilation of the tunnel.
- Installation of rail track and other items of rail infrastructure using rail mounted equipment. A flash butt weld (FBW) facility will be required to facilitate the welding of short (27.5 m) rail into long welded rail, approximately 400 m in length. FBW facilities will be located within the Project disturbance footprint during detailed design.

- Supply, delivery and installation of ballast and concrete sleepers
- Other miscellaneous activities to complete the works, including but not limited to site restoration and landscaping works
- No borrow pits, quarries or temporary workers accommodation are required for the Project.

The construction methodology and schedule will undergo refinement once a construction contractor is appointed and in response to approval conditions, implementation of the mitigation measures and commitments outlined in the EIS, infrastructure agreements and the final design.

2.3 Operation

The train and wagon information presented in this section has been used as the basis for the impact assessment.

It is estimated that in the opening year of the Project (2027), typical operations will involve approximately 226 trains per week with volumes increasing in future operational years. In 2027, the majority of the rail traffic on the Project will be existing trains which currently use the QR network. In future years, additional rail traffic will be generated as a result of the Inland Rail Program and the ARTC network.

To assess emissions from normal operations and potential worst-case operations the assessment of operational impacts has considered both peak and typical train volumes for 2040. The forecast typical and peak weekly train volumes for 2040 in addition to the types of trains are shown in Table 2.1. The forecast typical train volume for 2040 (328 trains per week) is anticipated to represent 81.6 per cent of the peak volume (402 trains per week), with an equal reduction (18.4 per cent reduction) across each train type. Train volumes in 2027 are lower than in 2040, and therefore assessment using 2040 train volumes provides a worst-case assessment of impacts to air quality.

It is noted that existing rail traffic on the West Moreton System rail corridor is predominantly comprised of coal trains, with a smaller number of agricultural freight services. The Project alignment caters for larger train load tonnages, larger train sizes and alternate configurations (e.g. more locomotives), which reduces the required number of coal services per day, while allowing for additional agricultural rail movements. The train types and configurations which will use the Project alignment have been considered in the AQIA.

Table 2.1 Weekly train movements along the Project alignment in 2040 by service

Train type/description	Volume of trains/week		Locomotive type			
	Typical[a]	Peak	NR Class[c]	SCT Class[d]	Class 82[e]	PR22L[f]
MB Express (Bromelton)	11	14	x	-	-	-
MB Express (Acacia Ridge)	11	14	x	-	-	-
MB Superfreighter (Bromelton)	33	40	-	x	-	-
MB Superfreighter (Acacia Ridge)	6	8	-	x	-	-
GB Superfreighter (Bromelton)	18	22	-	x	-	-
GB Superfreighter (Acacia Ridge)	8	10	-	x	-	-
New Acland Coal[b]	46	56	-	-	-	x
Cameby Downs/Rywung Coal[b]	46	56	-	-	-	x
Kogan Creek Coal[b]	34	42	-	-	-	x
Wilkie Creek Coal[b]	23	28	-	-	-	x
Narrabri – Port of Brisbane (PoB) Grain	20	24	-	-	x	-
Yelarbon – PoB Grain	20	24	-	-	x	-
Oakey – PoB Grain[b]	19	24	-	-	x	-
Narrabri – PoB Export Cont	10	12	-	-	x	-
Yelarbon – PoB Cotton	5	6	-	-	x	-

Train type/description	Volume of trains/week		Locomotive type			
	Typical[a]	Peak	NR Class[c]	SCT Class[d]	Class 82[e]	PR22L[f]
Toowoomba Export Containers[b]	10	12	-	-	-	x
Westlander[b]	3	4	-	-	-	x
Oakey – Rosewood Livestock[b]	5	6	-	-	x	-
Total	328	402				

Table notes:

a The typical volumes are approximate and have been rounded to the nearest whole number based on typical train volumes being expected to be 81.6 per cent of the peak volume for 2040.
b Indicates that this train service is an existing service which currently uses the QR West Moreton System rail corridor.
c National Rail class locomotives
d Downer EDI SCT/LDP Class locomotive
e Downer EDI 82 Class locomotive
f Downer EDI/Progress Rail Services PR22L locomotive
"X" Indicates that this locomotive operates the listed train type, "- "indicates that this locomotive is not on this train type.
SCT = Specialised Container Transport

The Project alignment is co-located with the existing QR West Moreton System rail network for approximately 5.6 km. There are three tie-ins with the existing rail network; one at the western end of the Project (near InterLinkSQ), one into Toowoomba, east of Gowrie, and one near Helidon. For the purposes of the assessment it has been assumed that all trains, including those existing services which currently use the QR network, will travel along the Project alignment. This is a conservative assumption as it concentrates emissions from train travel to a single alignment (the Project). The train services which are existing services that currently use the QR network include the Oakey grain and livestock trains, the Westlander passenger train and a number of coal trains (loaded travelling eastbound to Brisbane), and are identified in Table 2.1.

Emission factors for the locomotives have been adopted from the United States Environmental Protection Agency (US EPA 2009) and the European Monitoring and Evaluation Program/European Environment Agency (EMEP/EEA 2016a). The US EPA emission factors are provided as tiers (Tier 0 to Tier 5). The tiers are based on the year of manufacture of the locomotive and the emission rate for pollutants (e.g. PM_{10}, NO_x, etc), with emissions decreasing as the tier increases (e.g. a Tier 1 locomotive has higher emission rates than a Tier 2 locomotive). Similarly, to the US EPA tiers, the EMEP/EEA emission factors are provided as emission stages, with higher stages corresponding to newer engines and lower emissions.

The locomotives modelled in the assessment (refer Table 2.2) comply with the emission specifications for US EPA Tier 0 and Tier 1, and EEA Stage IIIa, and the emission factors for these classes have been used in the assessment. The train specification data presented in Table 2.2, including train length, which has been used in the assessment is based on operational modelling provided by ARTC.

The average speed assumed in the assessment of train travel emissions (modelled average speed, refer Table 2.2) has been calculated assuming that the average travel speed is 75 per cent of the maximum design speed. Assessment of train travel emissions has also assumed that trains idle for 25 per cent of total journey time (based on the Project alignment length and average travel speed).

Changes in grade along the Project alignment have not been considered when estimating emissions from locomotives, with engine load determined based on a review of duty cycle power ratings for line haul locomotives (refer Section 5.3.1.1).

The number of locomotives for each train type are presented in Table 2.2. The locomotive numbers in Table 2.2 have been adopted for all trains (dependent on type) modelled in the assessment, including for existing services which currently use the QR West Moreton System rail corridor which are assumed to travel along the Project alignment for the purposes of this assessment.

The locomotive data presented in Table 2.3 has been provided by the Project design team (FFJV). The US EPA and EEA emission factors are the most accurate source of available emissions data for the locomotives and are considered appropriate for use in the assessment.

Table 2.2 Locomotive data

Train description	Locomotives[a]	Maximum wagons length (m)	Maximum design rail speed (km/h)	Modelled average rail speed (km/h)[b]	Locomotive height (m)	Wagon height
Express freight	NR Class (3)	1,750	115	86	4.24	6.8
Super freighter	SCT Class (2)	1,750	115	86	4.24	5.925
Grain, cotton, and livestock	Class 82 & 2300 Class (2, 3)[C]	1,750	80	60	-[d]	-[d]
Coal	PR22L (3)	990	100/80[e]	75/60 [e]	3.87	3.95
Westlander	PR22L (1)	90	80	60	3.87	2.9

Table notes:

a Number in brackets indicates the number of locomotives per train.
b Calculated assuming 75 per cent of journey time at maximum design speed, 25 per cent of journey time is idling. This is considered to be a conservative assumption as maximum design speed is greater than operational maximum speed.
c Locomotive configuration dependant on wagon payload.
d No information was available for this item for this locomotive.
e Varies depending on direction of travel (75 km/h westbound (unloaded), and 60 km/h eastbound (loaded)).
km/hr – kilometres per hour
SCT, NR and PR22L are all locomotive types

Table 2.3 Locomotive specifications

Feature	NR Class	SCT/LDP	Class 82	EMD22L (formally PR22L)
Manufacturer	UGL/GE	Downer EDI	Downer EDI/EMD	EMD
Prime Mover	7FDL16	GTA46C-Ace	12-710G3AJWC	Caterpillar 3512C-HD
US EPA or EMEP/EEA Emissions Standard	Tier 0	Tier 1	Tier 0	EURO IIIa
Rated Max Power (kW)	2,917	3,350	2,425	1,640

Table notes:

Locomotive specifications sourced from Inland Rail Phase 2 Tunnel Basis of Design.
kW = kilowatt

2.3.1 Tunnel infrastructure

To pass under the Toowoomba Range the proposed Toowoomba Range tunnel will be constructed as part of the Project. For typical operations the tunnel will be ventilated by piston action of moving trains as well as the proposed mechanical ventilation system. The mechanical ventilation system exhausts emissions from the tunnel via tunnel portals, with intake air drawn into the tunnel via an intermediate ventilation shaft. Locomotive emissions which occur within the tunnel will not be emitted from the intermediate ventilation shaft. The ventilation design proposes to include the following infrastructure:

- Purging system with purge time of approximately 6 minutes for up-grade and down-grade train passes between trains
- The east to west alignment on approach and through the Toowoomba Range tunnel has a design grade of 1:64.7 (1.55 per cent)
- Intermediate ventilation shaft 17 m in diameter and 100 m in depth (Ch 6.83 km)
- Portal doors are located at both ends of the tunnel to direct airflow, with an additional door at the intermediate ventilation shaft location
- Eight unidirectional axial fans for the eastern section (seven duty and one standby)
- Eight unidirectional axial fans for western section (seven duty and one standby)

- For emergency situations a smoke management ventilation building is proposed at each tunnel portal and at the intermediate ventilation shaft. These ventilation buildings are proposed to include three large axial fans and air nozzles to control the direction of smoke and heat in the event of a tunnel fire. The tunnel design includes a Longitudinal Egress Passage (LEP) to facilitate the safe egress of train driver, passengers, crew and emergency services agencies intervention in the event of an incident in the tunnel. Ventilation design has considered the LEP, with the LEP to be served by a pressurisation system that reasonably prevents smoke spill into the LEP from a fire incident in the tunnel. Air quality dispersion modelling of an emergency event has not been undertaken for the assessment as it is an atypical event and the uncertainty inherent in estimating emissions from an unknown event would be high.

A basic representation of the ventilation design is shown in Figure 2.1. A concept drawing of the Toowoomba Range tunnel western portal is shown in Figure 2.2.

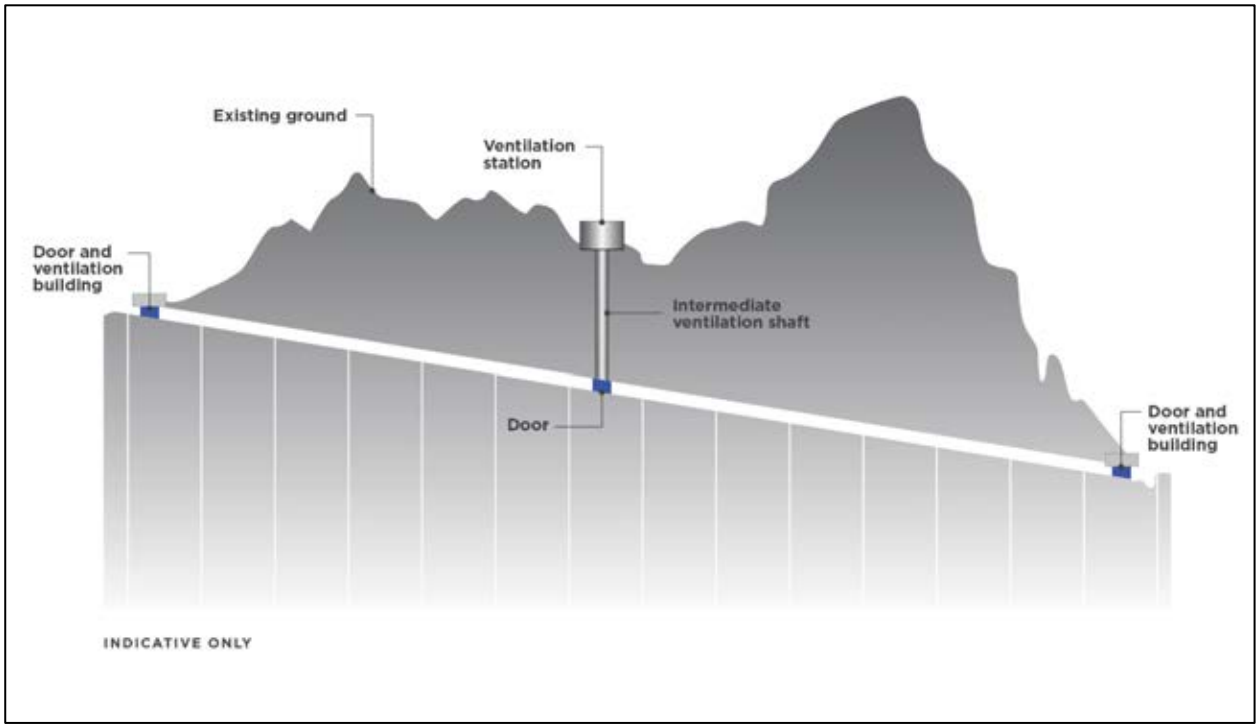


Figure 2.1 **Tunnel cross section and ventilation system diagram**



Figure 2.2 **Concept drawing of the Toowoomba Range tunnel western portal**

The following tunnel information was also used in the assessment:

- Western tunnel portal – Project Chainage (Ch) 3.905 km
- Eastern tunnel portal – Ch 14.501 km
- Tunnel length – 6.24 km without ventilation buildings and 6.35 km with ventilation buildings
- The free cross-sectional area of the tunnel is 73 m^2
- The portal doors each have a cross sectional area of 60 m^2.

Source parameters used in the modelling of emissions from the tunnel portals are presented in Section 5.3.3.2.

2.3.2 Crossing loops and turnouts

Three new crossing loops, allowing trains in opposing directions to pass each other, are proposed for the Project. The loops would be constructed as new sections of track parallel to the mainline track.

The loops range in length to accommodate the surrounding area and topography and are a minimum of 2,200 m to fit the design length of the train (1,800 m). The Project corridor is of sufficient width to accommodate future crossing loop extensions to accommodate trains of up to 3,600 m in length. Maintenance sidings and turnouts have been incorporated at each crossing loop location.

Table 2.4 presents the crossing loop start and end chainage locations. The crossing loops location has been determined by operational modelling, with the western crossing loop located adjacent the existing crossing loop on the QR network at Gowrie.

The methodology used for the assessment of emissions from the crossing loops is discussed in Section 5.3.2.7.

Table 2.4 Crossing loop chainage locations

Crossing loop	Start chainage (km)	End chainage (km)
West of Toowoomba Range tunnel	1.740	3.940
East of Toowoomba Range tunnel	10.425	12.662
Postmans Ridge	19.550	21.810

Turnouts allow the train to be guided from one section of track to another. Turnouts that tie-in to the existing QR West Moreton System rail corridor will be incorporated as part of the Project. There are 16 turnouts proposed along the alignment, including those associated with:

- Crossing loops
- Maintenance sidings
- Cross overs between Inland Rail and the existing West Moreton System
- Connection to the proposed InterLinkSQ facility
- Connection provided at the western tunnel portal to the West Moreton System to allow for train movements between Brisbane and Toowoomba.

2.4 Project air emissions

Pollutants of potential concern to the Project have been identified through a review of expected activities, applicable National Pollutant Inventory (NPI) emission estimation manuals, international emissions estimation guidelines and EIS literature for similar rail projects.

During the construction phase, particulate matter deposited as total suspended particulates (TSP) and airborne concentrations of particulate matter less than 10 micrometres in diameter (PM_{10}) will be of primary concern. These pollutants have the potential for nuisance impacts if not correctly managed (UK IAQM 2014).

Particulate matter less than 2.5 micrometres in diameter ($PM_{2.5}$) is typically emitted in minor quantities from mechanical sources, and is more predominant from combustion sources (i.e. combustion engines). Emissions of combustion gases (e.g. nitrogen oxide (NO_x) and carbon monoxide (CO)) and $PM_{2.5}$ from diesel construction vehicles and mobile plant will be significantly lower than particulate emissions from construction activities. Emissions of combustion gases and $PM_{2.5}$ are considered unlikely to result in exceedance of air quality goals or cause nuisance to sensitive receptors and therefore have not been assessed for the construction phase.

In addition to construction dust, odour and volatile organic compounds (VOCs) will be emitted as fugitive emissions from fuel tanks located at laydown areas.

The primary source of air pollution during the operation of the Project will be locomotive engine exhaust. The gaseous pollutants contained in the exhaust are produced as a product of diesel combustion and include NO_x, PM_{10}, $PM_{2.5}$, VOCs, and polycyclic aromatic hydrocarbons (PAHs).

In addition to diesel combustion, fugitive coal dust emissions (TSP, PM_{10}, $PM_{2.5}$ and dust deposition) are also considered to have the potential to impact sensitive receptors and have been assessed for the operation phase. These fugitive emissions will be generated during travel and while stationary at crossing loops.

For the Toowoomba Range tunnel, NO_x and CO have been considered as part of the tunnel design for maintaining acceptable in-tunnel air quality (refer Section 7.6).

A brief discussion regarding these pollutants and their potential effects on health and the environmental values follows. Note that in addition to the pollutants assessed in this assessment, discussion of other pollutants not considered in detail (due to their low expected emissions) have also been provided in this section. The information presented in this section has been acquired from the NPI website (DAWE 2019) and the NSW Department of Planning, Industry and Environment website (NSW Department of Planning, Industry and Environment 2020).

2.4.1 Particulate matter

Airborne particles are commonly differentiated according to size based on their equivalent aerodynamic diameter. TSP refer to airborne particles, generally up to 100 micrometres (µm) in diameter. TSP is primarily associated with aesthetic impacts associated with coarse particles settling on surfaces, which also causes deposition and discolouration. These large particles can, however, cause some irritation of mucosal membranes, which pose a greater risk to health when ingested if they are contaminated. Particles with diameters less than or equal to 10 µm (known as PM_{10}) can be created through crushing and grinding of rocks and soil, and typically comprise soot, dirt, mould and pollen. These particles tend to remain suspended in the air for longer periods than larger particles (minutes or hours) and can penetrate into human lungs. Fine particulates (those with diameters less than or equal to 2.5 µm, known as $PM_{2.5}$) are typically generated from vehicle exhaust, bushfires, and some industrial activities and can remain suspended in the air for days or weeks. As these fine particulates can travel further into human lungs than the larger particulates and are often made up of heavy metals and carcinogens, fine particulates are considered to pose a greater risk to health.

Exposure to particulate matter has been linked to a variety of adverse health effects, such as respiratory problems (for example coughing, aggravated asthma, chronic bronchitis), lung damage and non-fatal heart attacks. Furthermore, if the particles contain toxic materials (such as lead, cadmium, zinc) or live organisms (such as bacteria or fungi), toxic effects or infection can occur from inhalation of the particulate matter.

In addition to the respiratory health impacts from fine particulate matter suspended in air, dust can cause nuisance impacts by settling on surfaces and possessions. Dust deposition is the result of suspended particles settling out of suspension. Dust deposition is a common cause of complaints, particularly due to staining of clothes (hanging on washing lines) and deposition on vehicles and window sills. Deposition on surfaces which feed into water storage can also result in contamination of potable water supplies.

For large sources or intensive activities generated dust can affect visibility. There are methods to measure and assess visibility, including the Ringelmann scale (Ringlemann 1898; Uekoetter 2005). Generally, plume visibility issues from rail tunnels can arise from the incomplete combustion of diesel caused by insufficient cooling of locomotive engines due to smaller than required tunnel size. The design of the Toowoomba Range tunnel has ensured that locomotive engines do not overheat while inside the tunnel and thus mitigating the risk of this issue arising. Coal dust lift off could also result in visible plume emissions from the tunnel portals. However, mitigation measures such as veneering to coal wagons, which is a requirement of the South West Supply Chain Coal Dust Management Plan (South West Supply Chain 2019), significantly minimises the risk of visible plume emissions. As such, plume visibility is not assessed in any further detail in this assessment as it is expected that industry standard mitigation measures will prevent significant visibility impacts occurring.

Deposited dust also has the potential to inhibit plant growth or impair livestock development and therefore has the potential to impact on agricultural crops and farming activities, along with native vegetation, wetland habitats and some flora and fauna species. In addition, dust has the potential to adversely impact aesthetics and the amenity of areas. Appendix I: Terrestrial and Aquatic Ecology and Appendix J: Matters of National Environmental Significance discusses the potential impact of dust deposition on native vegetation, wetland habitats and flora and fauna species. This assessment considers the impact of deposited dust on aesthetic amenity and agricultural uses (refer Section 7).

The nature of the emissions from the coal wagons (laden and unladen) is fugitive i.e. the emissions are not released through an easily quantifiable source, such as a vent or stack. The primary mechanism for coal dust lift-off from coal wagons is the movement of air over uncovered laden wagons. Environmental Evaluation of Fugitive Coal Dust Emissions from Coal Trains (Connell Hatch 2008) explains that airflow across the wagon can move particles by three transport modes: suspension, saltation and surface creep, described as follows:

- Suspension: particles that are less than 75 µm in size (TSP, PM_{10} and $PM_{2.5}$) are small enough to become suspended in the airflow and transported off the wagon
- Saltation: particles from 75 to 500 µm in size (TSP) move and bounce in the layer close to the interface between the coal surface and the flow of air
- Surface creep: particles from 500 to 1,000 µm in size move by surface creep propelled by wind and the impact of particles moving by saltation.

Connell Hatch (2008) state that PM_{10} is generally found to represent 50 per cent of TSP, but no composition percentage is provided for $PM_{2.5}$. Further discussion on the estimation of $PM_{2.5}$ composition is provided in Section 4.4.2.

2.4.2 Nitrogen oxides

Nitrogen dioxide (NO_2) is a brownish gas with a pungent odour. It exists in the atmosphere in equilibrium with nitric oxide (NO). The mixture of these two gases (and some other minor nitrogen and oxygen gas mixtures) is commonly referred to as NO_x. NO_x are a product of combustion processes. In urban areas, motor vehicles and industrial combustion processes are the major sources of ambient NO_x. NO_2 can cause damage to the human respiratory tract, increasing a person's susceptibility to respiratory infections and asthma. Sensitive populations, such as the elderly, children, and people with pre-existing health conditions are most susceptible to the adverse effects of NO_2 exposure. NO_x are also primary ingredients in the reactions that lead to photochemical smog formation. Excessive levels of NO_x, particularly NO_2, can cause death in plants and roots and damage the leaves of many agricultural crops.

2.4.3 Carbon monoxide

CO is a colourless, odourless gas produced by the incomplete combustion of fuels containing carbon (e.g. oil, gas, coal and wood). CO is absorbed through the lungs of humans, where it reacts to reduce the blood's oxygen-carrying capacity. In urban areas, motor vehicles account for up to 90 per cent of all CO emissions.

Short term inhalation of relatively low levels of CO (200 parts per million (ppm) for 2 to 3 hours) can cause headaches, dizziness, light-headedness and fatigue. Short term exposure to higher concentrations (400 ppm) of CO can cause sleepiness, hallucinations, convulsions, collapse, loss of consciousness and death. Long term exposure to low levels of CO can result in heart disease and damage to the nervous system, whilst long term exposure of pregnant women to CO may result in low birth weights and other birth defects.

The tunnel design has ensured that in-tunnel CO concentrations will be below occupational health and safety levels (refer Section 7.6). However, concentrations of CO normally present in the atmosphere are unlikely to cause ill effects and therefore have not been considered further in the AQIA.

2.4.4 Sulfur dioxide

Sulfur dioxide (SO_2) is a colourless gas with a sharp, irritating odour. It is formed in combustion processes through burning fossil fuels containing sulfur. SO_2 may be oxidised in the atmosphere to form sulfuric acid, which contributes to acid rain. SO_2 is also an irritant gas that can cause respiratory tract infections. People with pre-existing respiratory conditions such as asthma are most sensitive to SO_2 exposure. The simultaneous presence of airborne particulate matter can compound these effects. SO_2 and its aerosols can also damage vegetation and some materials.

SO_2 in low concentrations is a common pollutant in cities and some industrial environments. Higher exposure to SO_2 is typically limited to workplace environments where it is produced as a by-product. Short term exposure (5 to 15 minutes) to concentrations of 10 to 50 ppm causes irritation of the eyes, nose and throat, choking and coughing.

The study assumes low sulfur content fuel as per the requirements of the *Fuel Quality Standards Act 2000* (Cth). The regulation of low sulfur content fuel in Australia has significantly decreased the generation and concentrations of SO_2 near transport sources and concentrations are typically well below the relevant air quality goals. Due to the low likelihood of significant impact, SO_2 has not been considered further in this assessment.

2.4.5 Volatile organic compounds

Organic compounds with a vapour pressure at 20°C exceeding 0.13 kilopascals (kPa) are referred to as VOCs. VOCs can be a major precursor in the production of photochemical smog, which causes atmospheric haze, eye irritation, and respiratory problems. VOCs are commonly emitted from vehicle exhausts. Three primary VOCs (benzene, toluene and xylenes) are components of petroleum and diesel fuel and are typically the focus for assessments of engine combustion emissions.

2.4.5.1 Benzene

Benzene is an airborne substance that is a precursor to photochemical smog. Benzene exposure commonly occurs through inhalation of air containing the substance. It can also enter the body through the skin, although it is poorly absorbed this way. Low levels of benzene exposure result from car exhausts. Benzene is a toxic health hazard and a known carcinogen. It has long-term and highly acute toxic effects on aquatic life. It can cause death in plants and roots and damage to the leaves of many agricultural crops, however normal environmental concentrations of benzene are unlikely to damage plants (Scottish Environment Protection Agency 2016). Human exposure to very high levels for even brief periods of time can potentially result in death, while lower level exposure can cause skin and eye irritation, drowsiness, dizziness, headaches and vomiting, damage to the immune system, leukaemia and birth defects.

2.4.5.2 Toluene

Toluene (methylbenzene) is a highly volatile chemical that quickly evaporates to a gas if released as a liquid. Due to relatively fast degradation, toluene emissions are usually confined to the local area in which it is emitted. Human exposure typically occurs through breathing contaminated air, but toluene can also be ingested or absorbed through the skin (in liquid form). Toluene usually leaves the body within twelve hours.

Short-term exposure to high levels of toluene can cause dizziness, sleepiness, unconsciousness and sometimes death. Long-term exposure can cause kidney damage and permanent brain damage that can lead to speech, vision and hearing problems, as well as loss of muscle and memory functions. The substance can cause membrane damage in plant leaves and is moderately toxic to aquatic life with long-term exposure.

2.4.5.3 Xylenes

Xylenes are flammable liquids that are moderately soluble in water. They are quickly degraded by sunlight when released to air, and rapidly evaporate when released to soil or water. They are used as solvents and in petrol and chemical manufacturing.

Xylenes can enter the body through inhalation or skin absorption (liquid form), and can cause irritation of the eyes and nose, stomach problems, memory and concentration problems, nausea and dizziness. High-level exposure can cause death. The substances have high acute and chronic toxicity to aquatic life and can adversely affect crops.

2.4.6 Polycyclic aromatic hydrocarbons

PAHs are a group of over 100 chemicals, which are formed through the incomplete combustion of organic materials, such as petrol. Exposure to these chemicals can cause a range of adverse reactions, including irritation of the eyes, nose and throat and skin. Exposure to very high levels can result in symptoms such as headaches, nausea, damage to the liver and kidneys, and damage to red blood cells. A number of PAHs were declared to be probable or possible carcinogens to humans by the International Agency for Research on Cancer.

PAHs can vaporise or attach to dust particles and be transported through the air. The compounds commonly break down over days or weeks through chemical reactions in the atmosphere, others can persist for longer periods.

PAHs have moderate to highly acute (short-term) toxicity to birds and aquatic life and moderate to high chronic (long-term) toxicity to aquatic life. Some of these compounds are known to cause damage and death to crops. PAHs can bioaccumulate and are moderately persistent in the environment.

2.4.7 Dioxins

Dioxins form part of a group of chemicals known as persistent organic compounds, which are of concern due to their highly toxic potential. Exposure in the long terms can cause cancer, and impairment of the endocrine, immune, and reproductive systems. Dioxins can bioaccumulate within animals in the environment and tends to accumulate in fat.

Emissions of dioxins will occur as a result of fuel combustion in trains, motor vehicles and mobile plant. An inventory of dioxin emission sources in Australia in 2002 was prepared by the Commonwealth Department of the Environment and Heritage (DEH) (now the Department of Agriculture, Water and the Environment (DAWE)) (2004). The inventory determined that transport was a minor source of dioxins, contributing less than 2 per cent of total emissions.

Based on the rural location of the Project it is expected that existing background concentrations of dioxins will be low, and therefore a background concentration of zero has been assumed for the assessment. It is considered unlikely that emissions from the Project have the potential to result in significant impacts or exceedance of the relevant air quality goals for dioxins. However, dioxins have still been included in the AQIA due to their highly toxic potential and have been reported as source only contributions.

2.4.8 Trace metals

Heavy metals such as cadmium, lead, and mercury are common air pollutants that are typically emitted from industrial activities and fuel combustion. Trace metals do also exist within coal dust; however, the potential risk of exposure to trace metals in this form is low due to the stable chemical nature of coal. Exposure to heavy metals can result in a range of health impacts, including kidney and bone damage, developmental and neurobehavioral disorders, elevated blood pressure and potentially even lung cancer.

Long-term exposures to cadmium can cause anaemia, fatigue and loss of the sense of smell. Short term high exposures to cadmium can cause rapid lung damage, shortness of breath, chest pain, and a build-up of fluid in the lungs. Cadmium is a 'probable carcinogen'.

Lead can affect a wide variety of organs in the body, but mostly affects the nervous system. Exposure to lead may also cause paralysis in fingers, wrists or ankles and can cause small increases in blood pressure and may cause anaemia, malnutrition, abdominal pain and colic. High levels of lead can severely damage the brain and kidneys in adults and may cause death.

Exposure to high levels of any types of mercury can permanently damage the brain, kidneys, and developing foetus. Effects on brain functions may result in irritability, shyness, tremors, changes in vision or hearing and memory problems. High exposures of mercury vapour may cause chest pain, shortness of breath, and a build-up of fluids in the lungs that can be fatal.

Very minor emissions of trace metals will occur as a result of fuel combustion in trains, motor vehicles and mobile plant. As such, cumulative concentrations of trace metals at sensitive receptor locations are expected to be well below relevant air quality goals and are not expected to cause a significant impact but have been considered in the assessment.

2.4.9 Ozone

O_3 is not emitted directly from fuel combustion, but is a secondary pollutant formed via chemical reaction of other pollutant species (primarily NO_X and VOCs) in the local atmosphere. The formation of O_3 is heavily dependent on the regional airshed environment.

O_3 is a short-term lung irritant, affects lung function and can worsen asthma. Short term exposure to O_3 can cause difficulty in breathing, coughing, and throat irritation if exercising outdoors when O_3 levels are high.

O_3 is not expected to be emitted in significant quantities directly from Project sources. In addition, emissions of NO_X and VOCs from the Project, which may cause secondary formation of O_3, will be distributed along the Project alignment, rather than as a concentrated source (e.g. from an industrial activity). Air quality impacts as a result of O_3 are not expected to be significant and therefore the assessment of the formation of O_3 and other secondary pollutants has not been considered further in this assessment.

2.4.10 Odour

Odour emissions can be either a single compound or a mixture of compounds that have the potential to affect environmental amenity and cause nuisance.

Potential sources of odour from the Project include agricultural freight trains, sewage odour (e.g. from portable toilets during construction) and locomotive emissions.

3 Relevant legislation

The relevant legislation and policy instruments considered in the assessment of air quality are:

- EP Act
- Environment Protection Regulation 2019 (Qld) (EP Regulation)
- EPP (Air)
- National Environment Protection (Ambient Air Quality) Measure (Cth) (Ambient Air Quality NEPM)
- National Environment Protection (Air Toxics) Measure (Cth) (Air Toxics NEPM)
- National Health and Medical Research Council (NHMRC) Australian Drinking Water Guidelines (ADWG) 2011 (Updated August 2018)
- EP Act Air Guideline.

3.1 Environmental Protection Act 1994 and Environmental Protection Regulation 2019

The EP Act is intended to protect QLD's environment while allowing for development that improves total quality of life, now and in the future, by encouraging ecologically sustainable development. The EP Act regulates environmentally relevant activities (ERA) under the EP Regulation, with some of these activities requiring an environmental authority to operate. The EP Act also outlines primary duties which are applicable to everyone in QLD, including general environmental duty, which states that “a person must not carry out any activity that causes or is likely to cause environmental harm, unless measures to prevent or minimise the harm have been taken”.

There are several policies under the EP Act that govern the requirement for management of environmental issues such as noise, air and water. One of these, the EPP (Air) must be considered for the AQIA for the Project.

3.2 Environmental Protection (Air) Policy 2019

The EPP (Air) was prepared by the QLD Government with the purpose to achieve the object of the EP Act in relation to the air environment. Air quality objectives are provided in the EPP (Air) as indicators for identifying environmental values of the air environment that are required to be enhanced or protected. The air quality objectives in the EPP (Air) are intended to be progressively achieved over the long term.

The air quality objectives provided in the EPP (Air) are assessable at the location of sensitive receptors. Sensitive receptors are defined in the EP Act Air Guideline, with the definition including residential dwellings, short-term accommodation, educational facilities and health facilities. The Air EIS Information Guideline (DES 2020) also includes “remnant and regrowth ecosystems of all types” as key priority areas which “may be affected by the dispersal of contaminants” which require consideration. Detailed discussion of sensitive receptors and the types of land uses that are required to be considered is provided in Section 4.7.

A summary of the air quality objectives relevant to the Project is provided in Table 3.1.

The EPP (Air) recommends different strategies to control emissions for different types of activities, including:

- Identifying environmental values to be enhanced or protected
- Stating indicators and air quality objectives for enhancing or protecting the environmental values
- Providing a framework for making consistent, equitable and informed decisions about the air environment.

The environmental values to be enhanced or protected under the EPP (Air) are:

- The qualities of the air environment that are conducive to protecting the health and biodiversity of ecosystems; and
- The qualities of the air environment that are conducive to human health and wellbeing; and
- The qualities of the air environment that are conducive to protecting the aesthetics of the environment, including the appearance of buildings, structures and other property; and
- The qualities of the air environment that are conducive to protecting agricultural use of the environment.

The air quality objectives from the EPP (Air) (discussed in Section 3.6) have been used to assess the impact of the Project on environmental values of the air environment.

3.3 National Environment Protection (Ambient Air Quality) Measure and National Environment Protection (Air Toxics) Measure

National Environment Protection Measures (NEPM) are broad framework-setting statutory instruments that outline agreed national objectives for protecting or managing particular aspects of the environment. The air quality of an environment is protected by the Ambient Air Quality NEPM as amended in 2016 (National Environmental Protection Council 2016). The Ambient Air Quality NEPM provides guidance relating to air in the external environment and does not include air inside buildings or structures.

The Ambient Air Quality NEPM outlines monitoring, assessment and reporting procedures for the following pollutants:

- PM_{10}
- $PM_{2.5}$
- NO_2
- CO
- O_3
- SO_2.

In addition to the Ambient Air Quality NEPM, the Air Toxics NEPM provides a framework for monitoring, assessing and reporting on ambient levels for a number of air pollutants which are of concern with respect to human health (referred to as air toxics). The purpose of this NEPM is to collect information to facilitate the development of standards for ambient air toxics.

The Air Toxics NEPM includes monitoring investigation levels for use in assessing the significance of monitored levels. The monitoring investigation levels are levels of air pollution below which lifetime exposure, or exposure for a given averaging time, does not constitute a significant health risk. If these limits are exceeded in the short term, it does not mean that adverse health effects automatically occur; rather some form of further investigation by the relevant jurisdiction of the cause of the exceedance is required.

The Ambient Air Quality NEPM and Air Toxics NEPM standards are intended to be applied to air quality experienced by the general population in a region and not to air quality in areas in the region affected by localised air emissions, such as individual industrial sources or projects.

The goal of the Ambient Air Quality NEPM and Air Toxics NEPM is to achieve the recommended standards with the allowable exceedances, as assessed in accordance with the associated monitoring protocol, by 2008. The standards were set at a level intended to adequately protect human health and wellbeing. The standards in the Ambient Air Quality NEPM and Air Toxics NEPM relevant to the Project correspond to the EPP (Air) objectives protecting the health and wellbeing environmental values. The Ambient Air Quality NEPM standards relevant to the Project are consequently addressed in the air quality objectives in the EPP (Air).

3.4 Nuisance dust guideline

The deposition of larger dust particles can commonly cause nuisance in residential areas. Although no dust deposition objectives are prescribed in the EPP (Air), for site environmental licences and permits DES commonly set a guidance deposition rate of 120 milligrams per square metre per day (mg/m²/day) averaged over 1 month based on research into community complaints for coal related projects. Although this deposition limit is not a legislative requirement, it is frequently used in QLD (DES 2017) and is considered to be an appropriate criterion. For the purpose of the assessment a dust deposition goal of 120 mg/m²/day has been adopted.

3.5 Other guidelines

Not all compounds of interest are detailed in the aforementioned legislation or guidelines. As such, other sources have been utilised to provide air quality goals, which include the following:

- Brisbane City Council (BCC) Air Quality Planning Scheme Policy (AQPSP) (BCC 2014)
- NSW EPA Approved methods for the modelling and assessment of air pollutants in New South Wales (NSW) (NSW EPA 2016).

Both the NSW EPA and the BCC documents are considered to be robust guidance policies and are considered appropriate for application in the assessment.

In addition to the above, the following guidelines have also been considered for the assessment of potential impacts from the construction phase of the Project:

- Guideline: Recommended separation distances for industrial residual air emissions (Victoria Environment Protection Authority (Vic EPA) 2013)
- Evaluation distances for effective air quality and noise management (South Australian Environment Protection Authority (SA EPA) 2016)
- Guidance for the assessment of environmental factors: separation distances between industrial and sensitive land uses (Western Australian Environmental Protection Authority (WA EPA) 2005).

3.6 Air quality goals

The air quality objectives and guidelines values shown in Table 3.1 have been applied as the air quality goals for the Project. Where air quality objectives for identified pollutants are not within the EPP (Air) and NEPM legislation, objectives have been sourced from the NSW EPA (2016) and the BCC AQPSP (2014).

The air quality goals in Table 3.1 have designated averaging periods. Some pollutants have goals expressed as annual average concentrations due to the chronic way in which they affect health or the natural environment (i.e. effects occur (long-term) after a prolonged period of exposure to elevated concentrations) and others have goals expressed as 24 hour, 1 hour or 30 minute average concentrations (short-term) due to the acute way in which they affect health or the natural environment (i.e. after a relatively short period of exposure). Some pollutants have standards expressed in terms of both long-term and short-term concentrations.

The air quality goals presented in Table 3.1 are ambient goals and require consideration of existing background air quality in addition to contributions from the Project. A cumulative assessment of project emissions and background air quality has been undertaken to assess compliance with the air quality goals. Further discussion of background air quality for the Project is provided in Section 4.4.

The dust deposition goal shown in Table 3.1 is a daily deposition average (120 mg/m^2/day), calculated using the deposition level predicted at a modelled receptor over an averaging period of one month.

The environmental values listed in Section 3.2 that are being protected by each air quality goal (as defined by the EPP (Air) and other adopted legislation and guidelines) are shown in Table 3.1. The environmental values protected through meeting these air quality objectives include the following:

- Health and wellbeing
- Protecting the aesthetic environment
- Health and biodiversity of ecosystems.

With respect to the environmental value of the health and biodiversity of ecosystems, the only pollutant species of concern for the Project for which the EPP (Air) prescribes an air quality objective is NO_2 (refer Table 3.1). As discussed in Section 2.4.2, NO_2 has the potential to damage plants and roots.

In addition to the environmental values listed above, the EPP (Air) also includes air quality objectives to protect agriculture. The pollutant species of concern for agriculture as per the EPP (Air) are fluoride, SO_2 and O_3. As discussed in Section 2.4.4 and Section 2.4.9, SO_2 and O_3 are not pollutants of concern for the Project and have not been included in the assessment. Emissions of fluoride primarily originate from industrial processes such as the manufacture of glass or bricks, and not through the combustion of fuel (e.g. diesel locomotives), and therefore no significant emissions of fluoride are anticipated for the Project.

Based on the requirements of the EPP (Air), the impact of Project air emissions on agriculture does not require consideration. However, due to the potential for NO_2 to impact plants, roots and agricultural crops (refer Section 2.4.2), the potential for impacts to agriculture has been considered based on compliance with the NO_2 annual average objective for the protection of the health and biodiversity of ecosystems (refer Table 3.1).

In addition to NO_2, deposited dust is also considered to have the potential to impact on agricultural crops and livestock, through the inhibition of plant growth or impairment of livestock development.

Research on vegetation response to dust deposition impact (Doley 2003) has shown that, for sunny conditions, a dust deposition rate of up to 15 g/m²/month (or 500 mg/m²/day) is unlikely to have a detectable effect on crop growth, and it is not until a deposition rate of up to 30 g/m²/month (or 1,000 mg/m²/day) that there is a measurable reduction in crop growth under overcast conditions. Livestock research on dairy cows (Andrews & Skriskandarajah 1992) has shown that a dust deposition rate of up to 120 g/m²/month (or 4,000 mg/m²/day) does not influence the amount of feed cattle eat or the amount of milk produced. These dust deposition levels have been considered in the assessment of the operational phase of the Project to assess the potential for impact to agriculture.

The potential impacts from dust on native vegetation are also identified and discussed within Appendix I: Terrestrial and Aquatic Ecology and Appendix J: Matters of National Environmental Significance.

Table 3.1 Project air quality goals

Pollutant	Air quality goal (µg/m³)	Averaging period	Environmental value	Source
NO_2	250	1 hour[a]	Health and wellbeing	EPP (Air)
	62	Annual	Health and wellbeing	EPP (Air)
	33	Annual	Health and biodiversity of ecosystems	EPP (Air)
TSP	90	Annual	Health and wellbeing	EPP (Air)
PM_{10}	50	24 hours	Health and wellbeing	EPP (Air)
	25	Annual	Health and wellbeing	EPP (Air)
$PM_{2.5}$	25	24 hours	Health and wellbeing	EPP (Air)
	8	Annual	Health and wellbeing	EPP (Air)
Arsenic and compounds (measured as the total metal content in PM_{10})	6 ng/m³	Annual	Health and wellbeing	EPP (Air)

Pollutant	Air quality goal (µg/m³)	Averaging period	Environmental value	Source
Cadmium and compounds (measured as the total metal content in PM_{10})	5 ng/m³	Annual	Health and wellbeing	EPP (Air)
Lead and compounds (measured as the total metal content in TSP)	0.5	Annual	Health and wellbeing	EPP (Air)
Nickel and compounds (measured as the total metal content in PM_{10})	22 ng/m³	Annual	Health and wellbeing	EPP (Air)
Chromium (III) compounds (as PM_{10})	9	1 hour	Health and wellbeing	NSW EPA
Chromium (VI) compounds (as PM_{10})	0.1	1 hour	Screening health risk assessment	BCC AQPSP
	0.01	Annual	Screening health risk assessment	BCC AQPSP
1,3-butadiene	2.4	1 hour	Health and wellbeing	EPP (Air)
Benzene	5.4	Annual	Health and wellbeing	EPP (Air)
Toluene	1,100	30 minutes	Protecting aesthetic environment	EPP (Air)
	4,100	24 hours	Health and wellbeing	EPP (Air)
	400	Annual	Health and wellbeing	EPP (Air)
Xylenes	1,200	24 hours	Health and wellbeing	EPP (Air)
	950	Annual	Health and wellbeing	EPP (Air)
Benzo(a)pyrene (as a marker for PAHs)	0.3 ng/m³	Annual	Health and wellbeing	EPP (Air)
Polychlorinated dioxins and furans	3.0×10^{-08}	Annual	Screening health risk assessment	BCC AQPSP
Dust deposition	120 mg/m²/day	Monthly[b]	Nuisance (aesthetic environment)	DES Recommended[c]

Table notes:

µg/m³ micrograms per cubic metre
ng/m³ nanogram per cubic meter
mg/m²/day milligram per square metre per day

a Not to be exceeded more than one day per year.

b The 2019 version of the EPP (Air) does not allow for any exceedances of the 24 hour goal for PM_{10}. The 2008 version of the EPP (Air) allowed for exceedances for five days per year and therefore air quality assessments previously considered the 6th highest PM_{10} 24 hour average. As there are no exceedances allowed in the 2019 version of the EPP (Air), the maximum predicted PM_{10} 24 hour concentration has been considered in the assessment rather than the 6th highest.

c Not a legislated objective but adopted for the Project, refer Section 3.4.

The in-tunnel air quality criteria adopted for tunnel ventilation design for the Toowoomba Range tunnel are discussed in Section 7.6. The in-tunnel air quality criteria were adopted considering short-term human exposure (including workplace exposure) and locomotive manufacturer requirements for air intake quality. The air quality goals presented in Table 3.1 are relevant for the assessment of air quality impacts to environmental values, and are not strictly applicable to in-tunnel scenarios.

3.7 Drinking water quality objectives

Assessment of the potential for impacts to water quality has been undertaken considering guideline values for contaminants contained within the NHMRC ADWG (NHMRC 2018). The ADWG are intended to provide a framework for good management of drinking water supplies to ensure the safety of water at the point of use.

The ADWG are prescribed for use by the community and all agencies with responsibilities associated with the supply of drinking water, and have been developed considering the best available scientific evidence.

The ADWG are not mandatory standards; however, they provide a basis for determining the quality of water to be supplied to consumers in all parts of Australia. They are designed to provide an authoritative reference on what defines safe, good quality water, how it can be achieved and how it can be assured. The guidelines are concerned both with safety from a health point of view and with aesthetic quality.

With the exception of bottled or packaged water, which are covered by different legislative instruments, the ADWG apply to any water intended for drinking irrespective of the source (e.g. municipal supplies, rainwater tanks, bores, etc) or where it is consumed (the home, restaurants, camping areas, shops etc).

The ADWG include two different types of guideline value:

- a health-related guideline value, which is the concentration of a water quality contaminant that does not result in any significant risk to the health of the consumer over a lifetime of consumption, and
- an aesthetic guideline value, which is the concentration of a water quality contaminant that is associated with acceptability of water to the consumer, for example, appearance, taste and odour.

Table 3.2 presents the drinking water criteria (guideline values) which have been adopted from the ADWG for the pollutants of interest for the Project. The guideline values presented in Table 3.2 are all health-related guideline values.

Table 3.2 Drinking water quality guidelines

Pollutant	Guideline value (mg/L)	Environmental Value	Source
Arsenic	0.01	Health	(NHMRC 2018)
Cadmium	0.002	Health	
Lead	0.01	Health	
Nickel	0.02	Health	
Chromium VI	0.05	Health	

4 Existing environment

The existing environmental values of the air environment that may be affected by the Project are described in this section. Aspects of the existing environment relevant to this assessment include:

- Existing air quality, including regional and local sources of air pollution (natural and anthropogenic) that emit similar air pollutants as those being assessed
- Meteorological conditions and climate
- Terrain and land use.

In addition to these aspects, this section also introduces and presents the locations of sensitive receptors relevant to the Project that have been used in assessing the impact of the Project on the environmental values of the air environment. The environmental values of the air environment that may be affected by the Project are discussed in Section 3.2.

4.1 Air quality impact assessment study area and assessment domain

For the purpose of the assessment, the AQIA study area is defined as the area within 2 km of the Project alignment, which is the proposed rail centreline. The assessment domain is defined as the regional area surrounding and including the AQIA study area and has been adopted as the area within approximately 100 km of the alignment. Air quality and meteorological monitoring data from locations outside the AQIA study area but within the assessment domain have been considered in this assessment.

4.2 Monitoring stations

4.2.1 Meteorological stations

The BoM operates a network of meteorological stations around Australia that have long-term climatic data available for analysis.

Monitoring data from three BoM monitoring stations have been analysed to understand the climate and meteorological conditions in the assessment domain. The stations analysed are Toowoomba Airport (now the Toowoomba City Aerodrome), Oakey Aero (Oakey Army Aviation Centre) and University of Queensland (UQ) (Gatton). The details for each station presented in Table 4.1. The locations of the stations are shown in Figure 4.1.

The BoM stations are all considered to provide data representative of the AQIA study area as they are sited and use monitoring methodologies compliant with international standards. However, the Toowoomba Airport station was selected for use in the meteorology model over the Oakey Aero station due to its proximity to the Project alignment. Also, using only a single station from the Toowoomba end of the Project alignment ensures that conflicting data is not entered into the model and thus preventing the generation of anomalous meteorology data. As such, meteorological monitoring data from only the UQ Gatton and Toowoomba Airport stations has been used to develop the meteorological and dispersion models for the assessment.

In addition to the measured meteorological data from the BoM stations, output data from CALMET (refer Appendix A) has also been analysed and presented in this section to describe atmospheric stability and mixing height.

Table 4.1 Details of BoM meteorological stations considered in the assessment

Station name	Coordinates	Location relative to Project	Period operational	Elevation
Toowoomba Airport	-27.5425, 151.9134	3.7 km S	1996 - Present	641 m
Oakey Aero	-27.4034, 151.7413	14.7 km NW	1973 - Present	406 m
UQ - Gatton	-27.5436, 152.3375	22.3 km E	1897 - Present	89 m

4.2.2 Air quality stations

In order to characterise the existing air quality values in the AQIA study area, a review of available air quality monitoring data was conducted using publicly available data from the Queensland Government (Queensland Environmental Protection Agency (QLD EPA) 2007, QLD EPA 2008, Queensland Department of Science, Information Technology and Innovation (DSITI) 2012, DSITI 2013, DSITI 2014, DSITI 2015, DSITI 2016, DSITI 2017, DES 2018, DES 2019b) and monitoring which has been undertaken specifically for the Inland Rail Program.

An ambient monitoring network across QLD, operated by DES, monitors for controlled pollutants in areas with large population bases or heavy industry adjacent to residential areas. The nearest operational DES monitoring station to the AQIA study area is located at Gatton, approximately 22 km east of the Project. However, this station measures meteorological parameters only. Several DES air quality monitoring stations are located in the assessment domain, including: Flinders View, Mutdapilly, North Maclean, Rocklea, and Springwood; all of which are situated over 50 km to the east of Toowoomba. The locations of the DES monitoring stations are shown in Figure 4.1.

Air quality monitoring has also been undertaken for the Inland Rail Program for PM_{10}, $PM_{2.5}$ and dust deposition.

The Inland Rail air quality monitoring station (AQMS) monitors PM_{10} and $PM_{2.5}$ and is located at a residential dwelling located off Draper Road, Charlton (Lot 29, SP294200), west of Gowrie. The Inland Rail AQMS is located approximately 200 m to the south of the existing QR Western Line, and measured concentrations at the station will therefore be influenced by emissions from existing rail traffic operating on the QR network.

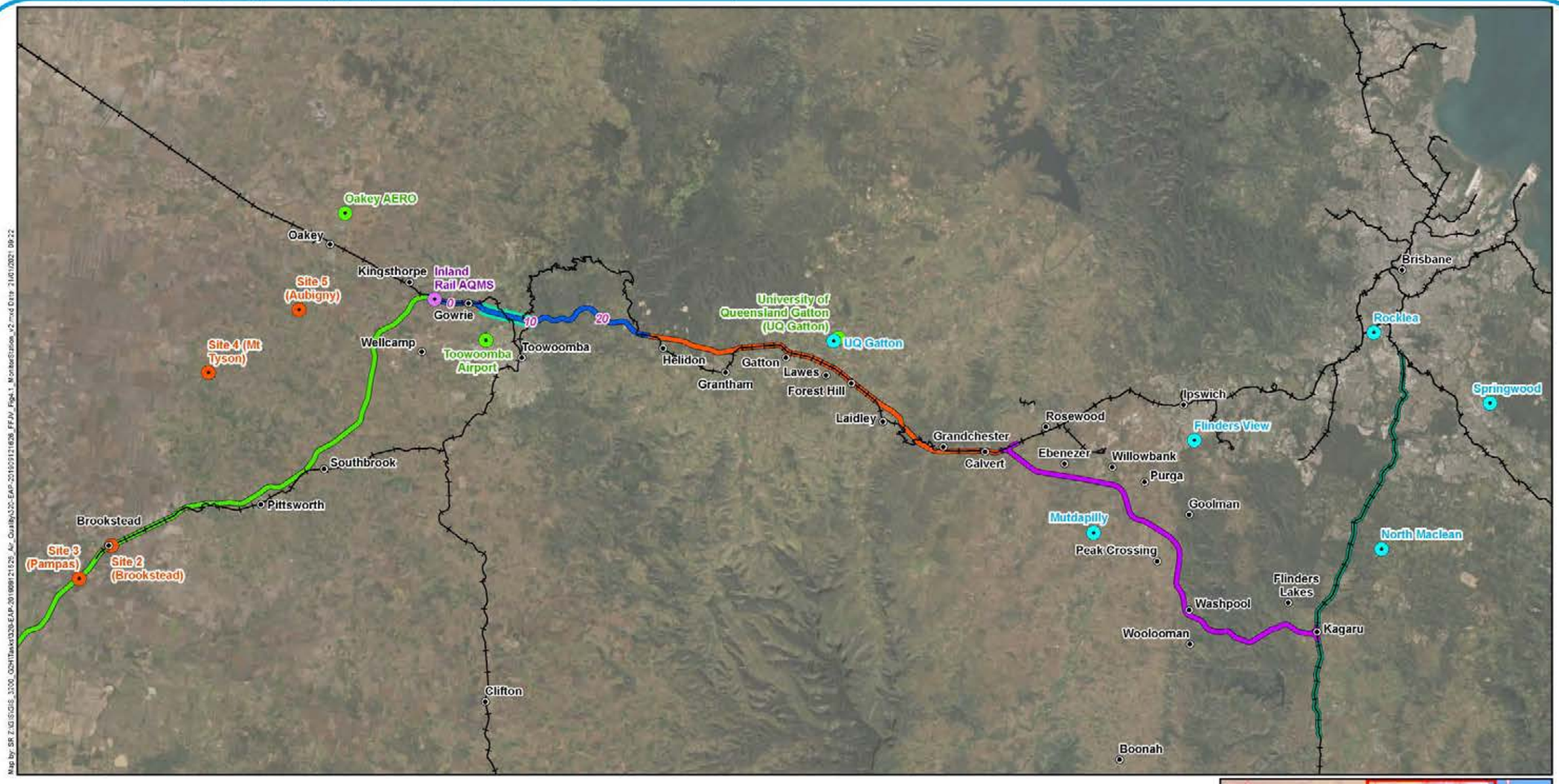
Prior to the installation of the Inland Rail AQMS, a short, three-month deposited dust monitoring program was conducted for the Inland Rail Project in 2016, as part of the Yelarbon to Gowrie (Y2G) Preliminary Environmental Assessment (PEA) Report (AECOM 2017). The monitoring was conducted at four sites in accordance with AS/NZS 3580.10.1:2003 Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method (Australian Standards 2003). The details of the assessment are discussed in Section 4.4.3.

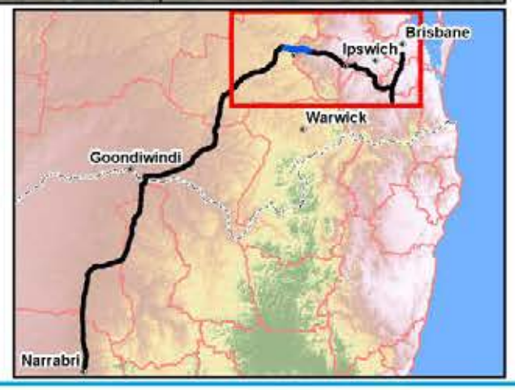
These locations of the AQMS and the dust deposition monitoring sites are shown in Figure 4.1.

Due to their proximity to the Project and local emission sources, monitoring data from the five DES monitoring stations in combination with the Inland Rail monitoring sites can be reliably extrapolated for the assessment of background air quality for the AQIA study area. The details of these stations including the pollutants monitored are outlined in Table 4.2.

To determine appropriate baseline levels of each pollutant, monitoring data from the DES monitoring stations from 2010 to 2018 and the Inland Rail AQMS has been reviewed. DES monitoring data up to 2018 has been reviewed as this is the most recent available validated data. Preference was given to the stations closest to the Project and in a similar environment (e.g. urban, etc); however, not all pollutants species of interest are measured at each DES monitoring station.

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Legend

- Localities
- 5 Chainage (km)
- B2G project alignment
- G2H project alignment
- H2C project alignment
- C2K project alignment
- K2ARB project alignment
- Existing rail
- Tunnel

Monitoring locations

- BoM monitoring station
- DES monitoring station
- ARTC monitoring station
- ARTC dust deposition monitoring locations

A3 scale: 1:500,000

0 5 10 15 20 25km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 21/01/2021 Version: 2
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 4.1:
Locations of meteorological and air quality monitoring stations

Historic monitoring data from QLD EPA (now DES) campaign monitoring undertaken in Toowoomba in 2006 and 2007 has also been reviewed. It is considered that this monitoring data is outdated and not representative of the current air environment. As such, this monitoring data was not used in this assessment.

Historic monitoring data from monitoring undertaken by DES at Jondaryan from 2014 to 2016 has not been considered in the assessment. This monitoring was undertaken to evaluate the impact of dust from a rail loading facility on nearby sensitive receptors and therefore is not considered appropriate for use in the assessment.

Table 4.2 Details of monitoring stations considered in the assessment

Station name	Operator	Coordinates	Location relative to the Project	Pollutants monitored	Years of data available
Gatton	DES	-27.5434, 152.3343	22 km E	None, meteorology only	2010 to 2018
Flinders View	DES	-27.6528, 152.7741	67 km E	NO_x, O_3, SO_2, PM_{10}	2010 to 2018
Mutdapilly	DES	-27.7528, 152.6509	58 km ESE	NO_x, O_3	2010 to 2018
North Maclean	DES	-27.7708, 153.0030	94 km ESE	NO_x, O_3	2010 to 2018
Rocklea	DES	-27.5358, 152.9934	87 km E	NO_x, O_3, PM_{10}, $PM_{2.5}$ and visibility-reducing particles.	2010 to 2018
Springwood	DES	-27.6125, 153.1356	102 km E	NO_x, O_3, SO_2, PM_{10}, $PM_{2.5}$ and air toxics (organic pollutants)	2010 to 2018
Inland Rail AQMS	ARTC	-27.4948, 151.8479	0.2 km SW	PM_{10} and $PM_{2.5}$	2018 to 2019
Site 2 (Brookstead)	ARTC (Y2G Dust Deposition Monitoring)	-27.7583, 151.4499	49 km SW	Dust deposition	May 2016 to July 2016
Site 3 (Pampas)		-27.7936, 151.4102	55 km SW		
Site 4 (Mt Tyson)		-27.5721, 151.5709	29 km W		
Site 5 (Aubigny)		-27.5046, 151.6825	17 km W		

Table notes:
east (E), east-south-east (ESE), south-west (SW), west (W)

4.3 Climate and meteorology

The Project is predominantly located in South East Queensland (SEQ) region (Lockyer Valley local government area (LGA)), which generally experiences a sub-tropical climate with distinct wet and dry seasons (BoM 2021). The western portion of the Project (i.e. above the Toowoomba Range within the Toowoomba LGA) is in the Darling Downs region, which experiences a temperature climate with hot summers and cool winters.

The following sections describe the temperature, rainfall, and wind speed and direction characteristics as measured by the UQ Gatton, Oakey Aero, and Toowoomba Airport BoM meteorology monitoring stations.

The following sections also include analysis of stability class and mixing height meteorology parameters based upon outputs from CALMET meteorological modelling completed for the assessment. Dispersion modelling for the assessment of the operational phase requires selection of a meteorological year. Selection of the meteorological year for the assessment was undertaken primarily considering the El Niño-Southern Oscillation (ENSO), which has the strongest effect on year to year climate variability in Australia. Considering the ENSO, the selected meteorological year for the assessment was 2013. The selection of the assessment year for meteorological modelling is discussed further in Section 5.3.2.1.

4.3.1 Temperature

Mean minimum and maximum temperatures have been collected from the Toowoomba Airport, Oakey Aero and UQ Gatton BoM stations and are displayed in Table 4.3.

Table 4.3 shows that the average maximum temperatures for UQ Gatton and Oakey Aero are similar, with the Toowoomba Airport monitoring station recording slightly lower maximum temperatures. The annual average minimum temperatures are similar across all three BoM stations, with slightly lower minimum temperatures recorded at Oakey Aero and Toowoomba Airport when compared with UQ Gatton. This difference in temperatures between the stations is likely attributable to the difference in monitoring station elevation, with the Toowoomba Airport BoM station located at 691 m above sea level, the Oakey Aero BoM station located at 406 m above sea level, and the UQ Gatton BoM station located at 89 m above sea level.

Table 4.3 Mean minimum (blue) and maximum (red) monthly temperatures at the BoM stations relevant to the Project

Station	Mean minimum and mean maximum temperatures (°C)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
UQ Gatton[1]	19.1	19.0	17.3	13.7	10.2	7.6	6.2	6.7	9.5	13.2	16.0	18.1	13.0
	31.6	30.8	29.6	27.2	23.8	21.1	20.8	22.5	25.6	28.2	30.2	31.3	26.9
Oakey Aero[2]	17.9	17.7	15.8	11.8	7.8	4.2	2.9	3.6	7.3	11.4	14.5	16.7	11.0
	31.0	30.1	28.7	25.9	22.3	19.1	18.7	20.5	24.0	26.7	28.8	30.3	25.5
Toowoomba Airport[3]	17.6	17.6	16.5	13.4	10.0	7.6	6.6	7.5	10.6	12.8	14.8	16.6	12.6
	28.4	27.6	26.2	23.3	19.9	17.0	16.8	18.7	22.3	24.5	26.2	27.6	23.2

Table notes:

1 Mean maximum and minimum temperature values have been calculated based on 106 years of data (1913 to 2019)
2 Mean maximum and minimum temperature values have been calculated based on 46 years of data (1973 to 2019)
3 Mean maximum and minimum temperature values have been calculated based on 24 years of data (1996 to 2019)

4.3.2 Rainfall

Mean rainfall values have been collected from the Toowoomba, Oakey Aero and UQ Gatton BoM stations and are presented in Table 4.4. The data shows that distinct wet (summer) and dry (winter) seasons are experienced at the monitoring locations annually. Of the three stations, UQ Gatton receives the highest amount of rainfall annually (770.2 mm), followed by Toowoomba Airport (718.1 mm) and Oakey Aero (614.3 mm). Over 39 per cent of average annual rainfall occurs during summer for each of the stations.

Table 4.4 Mean monthly and annual rainfall at the for BoM stations relevant to the Project

Station	Mean rainfall (mm)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Annual
UQ Gatton[1]	110.1	99.4	79.3	48.6	45.4	41.7	36.4	26.7	34.8	65.0	78.5	99.2	770.2
Oakey Aero[2]	77.7	78.2	51.4	29.3	38.8	29.6	28.2	25.4	31.0	57.7	75.2	91.8	614.3
Toowoomba Airport[3]	90.6	102.2	86.4	26.2	36.5	36.1	26.6	29.8	35.6	65.1	75.8	104.0	718.1

Table notes:

1 Mean rainfall values have been calculated based on 122 years of data (1897 to 2019)
2 Mean rainfall values have been calculated based on 50 years of data (1970 to 2019)
3 Mean rainfall values have been calculated based on 24 years of data (1996 to 2019)

4.3.3 Wind speed and direction

Long-term annual wind speed and direction data was requested from BoM for the UQ Gatton, Oakey Aero, and Toowoomba BoM stations. Wind roses for each of these stations for the most recent years with available data from BoM (2008 to 2017) are presented in Figure 4.2, Figure 4.3 and Figure 4.4. The wind roses show the following:

- Figure 4.2 shows that the predominant wind direction at UQ Gatton is westerly, however easterly winds are more prevalent during warmer seasons. The proportion of calm conditions is 6 per cent.
- Figure 4.3 shows that the predominant wind directions recorded at Oakey Aero are easterly and east-north-easterly. The proportion of calm conditions is 0.4 per cent.
- Figure 4.4 shows that the dominant wind direction at Toowoomba Airport is easterly, with little variation recorded in different seasons. The proportion of calm conditions is 0.5 per cent.

Overall, analysis of the annual wind roses shows that the wind speed and directions at each BoM station varies significantly. This variation is due to the influence of terrain, elevation and land use on local scale winds, which is discussed further in Section 4.5.

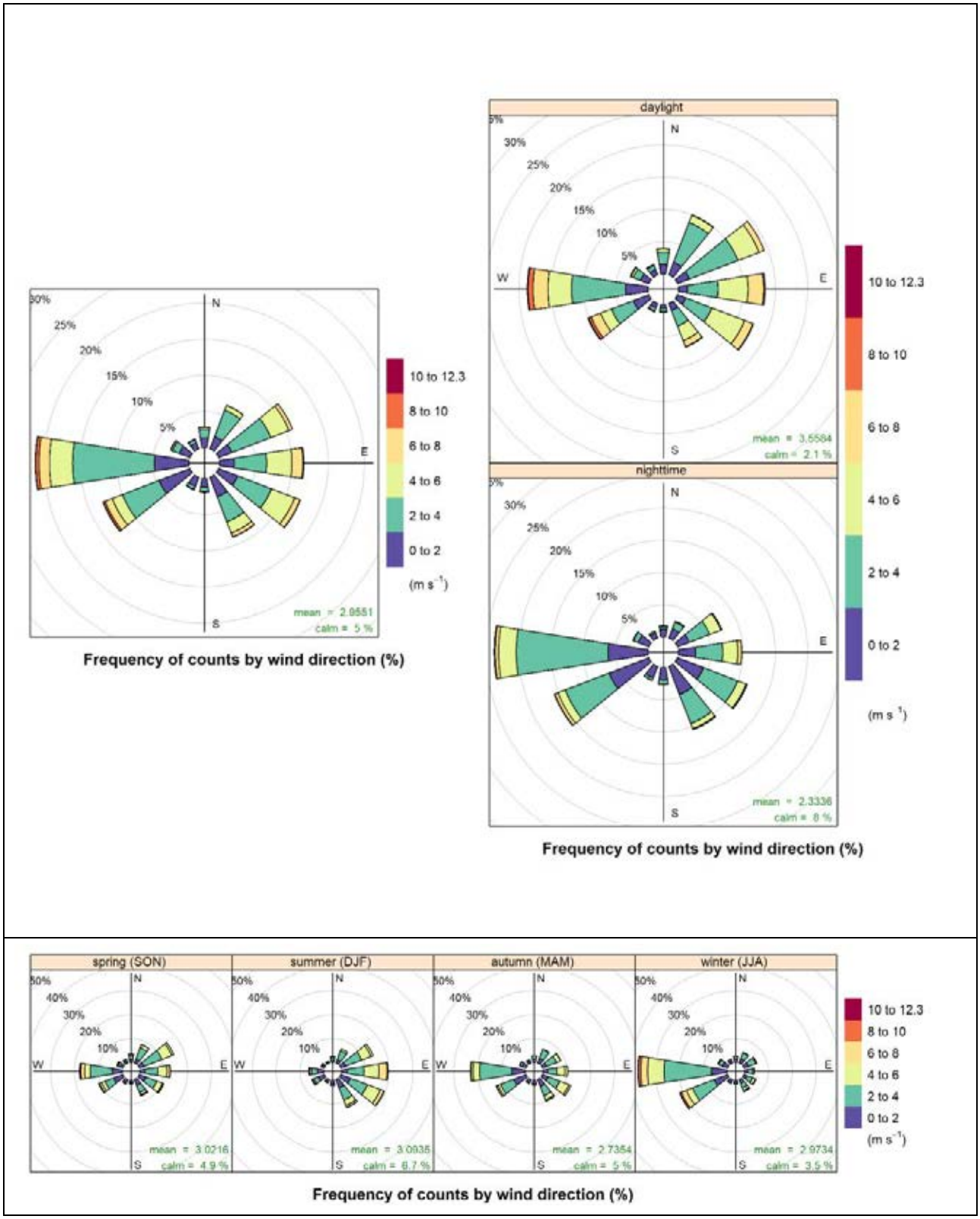


Figure 4.2 **University of Queensland Gatton BoM station wind roses for 2010 to 2017: all hours (top left); daylight and night-time hours (top right); and seasons (bottom)**

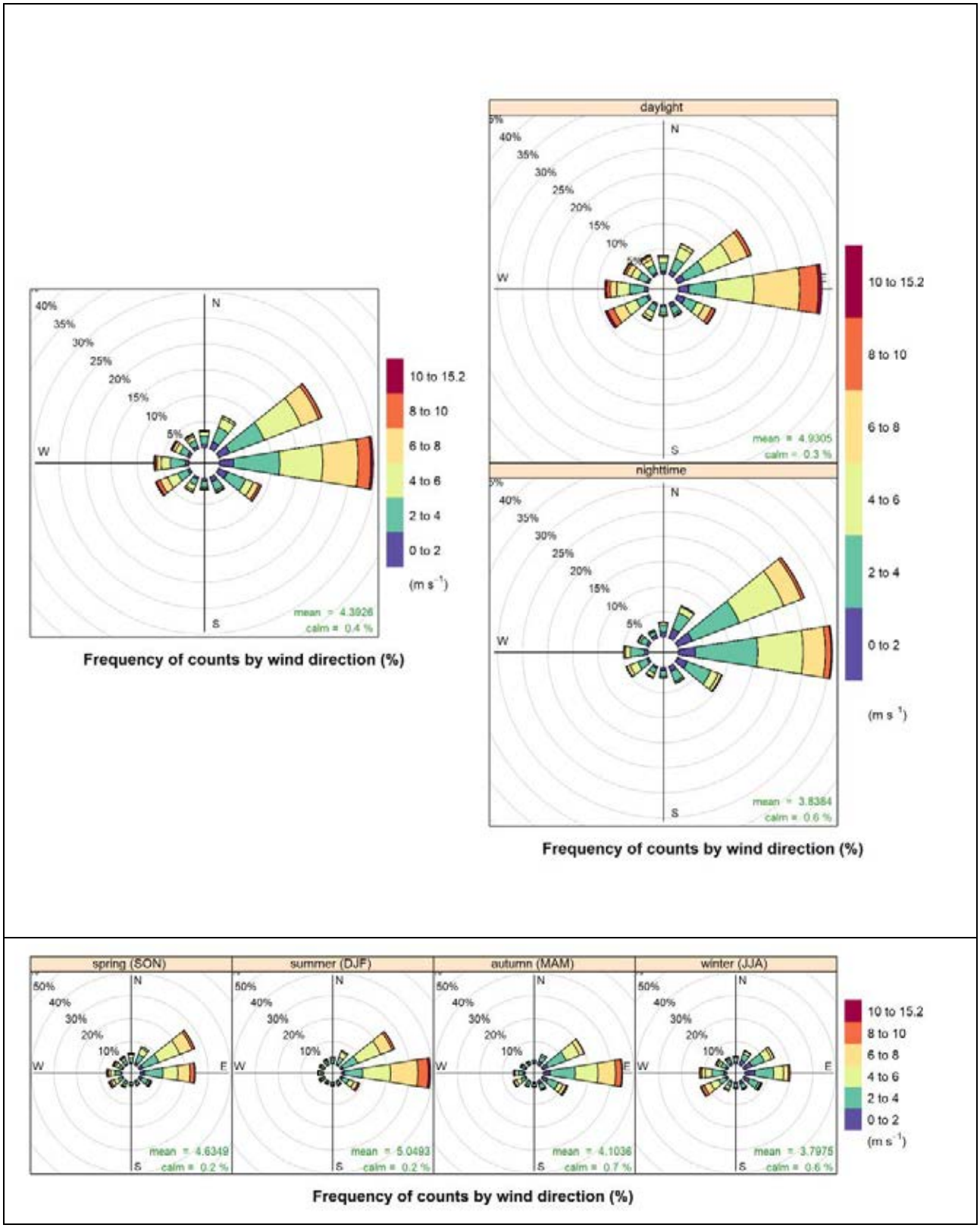


Figure 4.3 **Oakey Aero BoM station wind roses for 2008 to 2017: all hours (top left); daylight and night-time hours (top right); and seasons (bottom)**

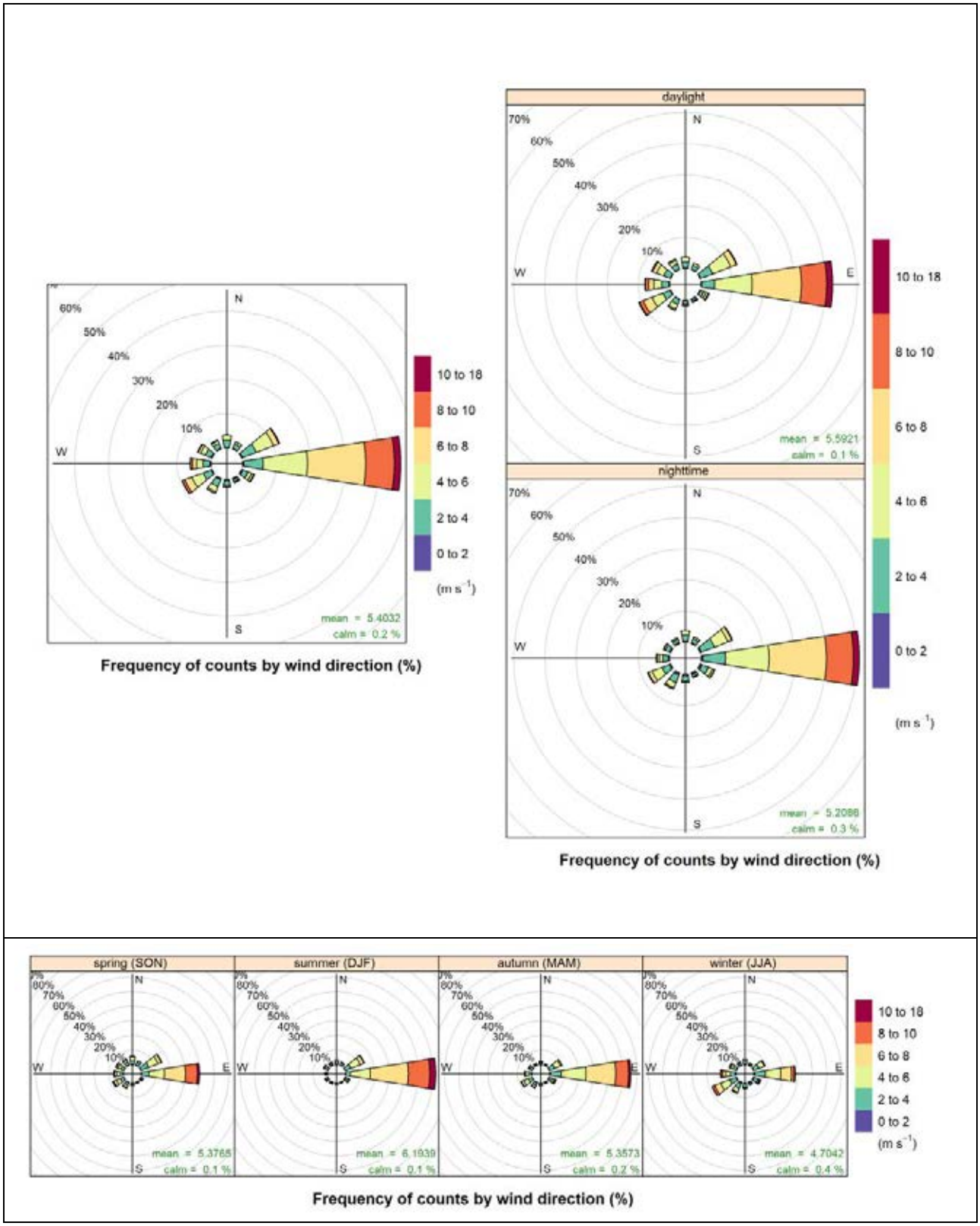


Figure 4.4 **Toowoomba Airport BoM station wind roses for 2010 to 2017: all hours (top left); daylight and night-time hours (top right); and seasons (bottom)**

4.3.4 Atmospheric stability

Stability is a measure of the convective properties of a parcel of air. Stable conditions occur when convective processes are low, while unstable conditions are associated with stronger convective processes, which are associated with potentially rapid changes in temperature. Stable atmospheres occur when a parcel of air is cooler than the surrounding environment, so the parcel of air (and any pollution within it) sinks. Conversely, unstable atmospheres occur when a parcel of air is warmer than the surrounding environment, making the parcel of air buoyant and, subsequently, leading to the parcel of air rising.

Stability is commonly explained using Pasquill-Gifford A – F stability class designations classes A, B and C represent unstable conditions, with class A representing very unstable conditions and class C representing slightly unstable conditions. Class D stability corresponds to neutral conditions, which are typical during overcast days and nights. Classes E and F correspond to slightly stable and stable conditions respectively, which occur at night.

Stability class data extracted from the CALMET files for locations representing the Toowoomba Airport and UQ Gatton BoM stations and the western and eastern portals of the Toowoomba Range tunnel are presented in Figure 4.5 to Figure 4.8.

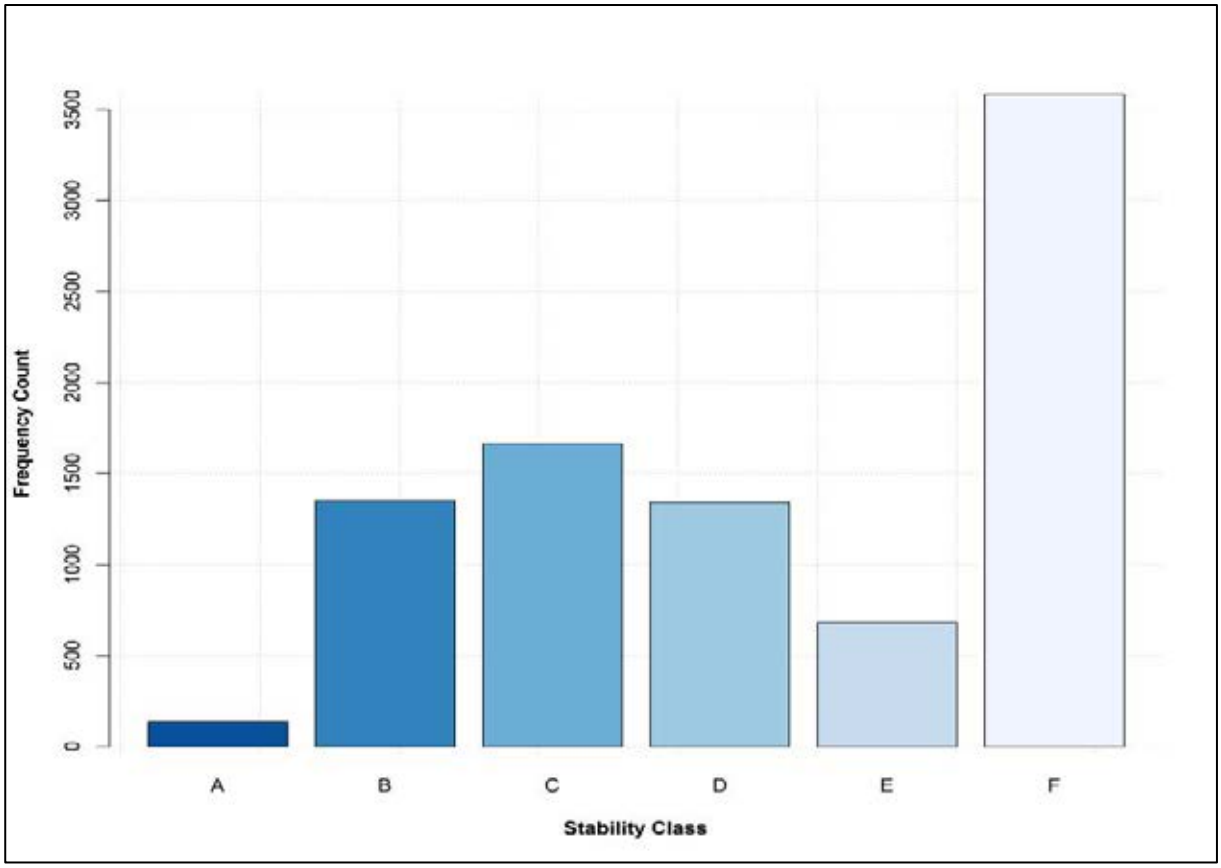


Figure 4.5 **CALMET generated hourly stability class frequency for University of Queensland Gatton BoM station**

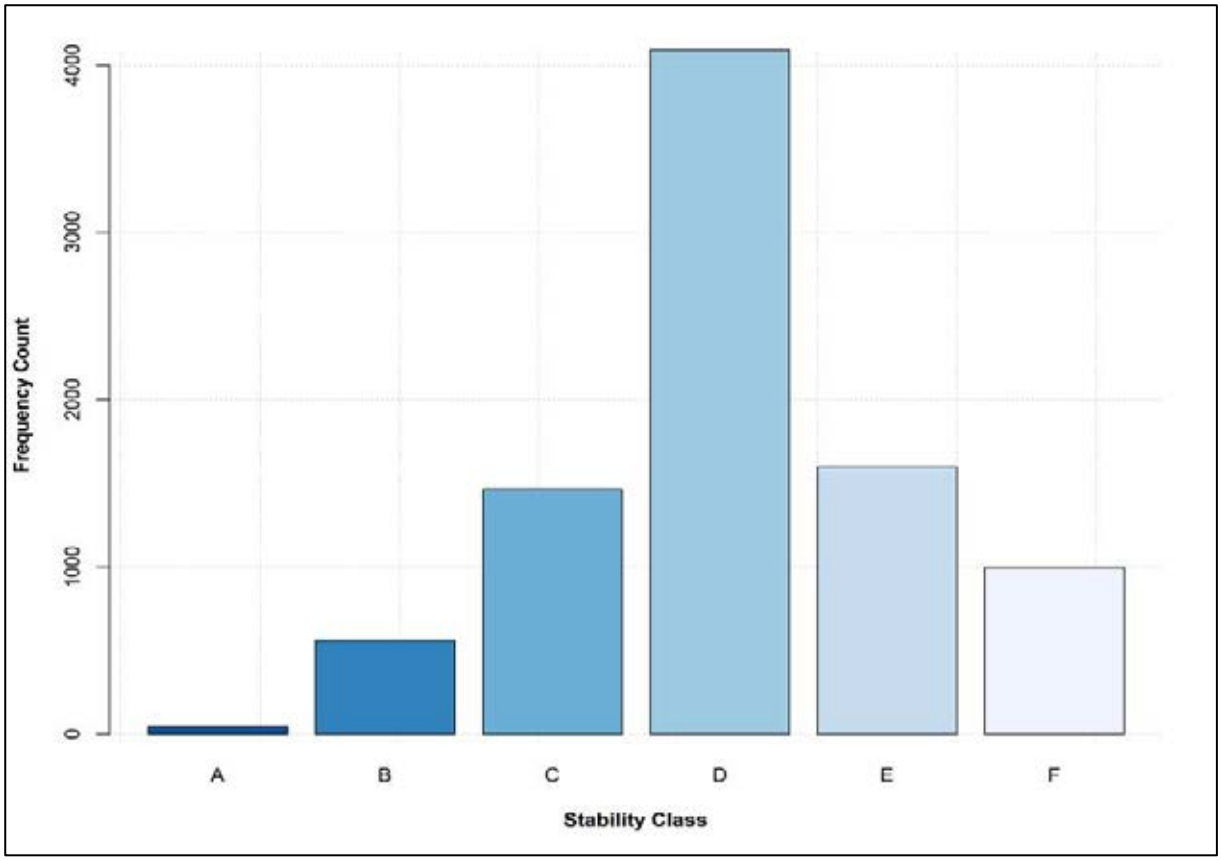


Figure 4.6 **CALMET generated hourly stability class frequency for Toowoomba Airport BoM station (2013)**

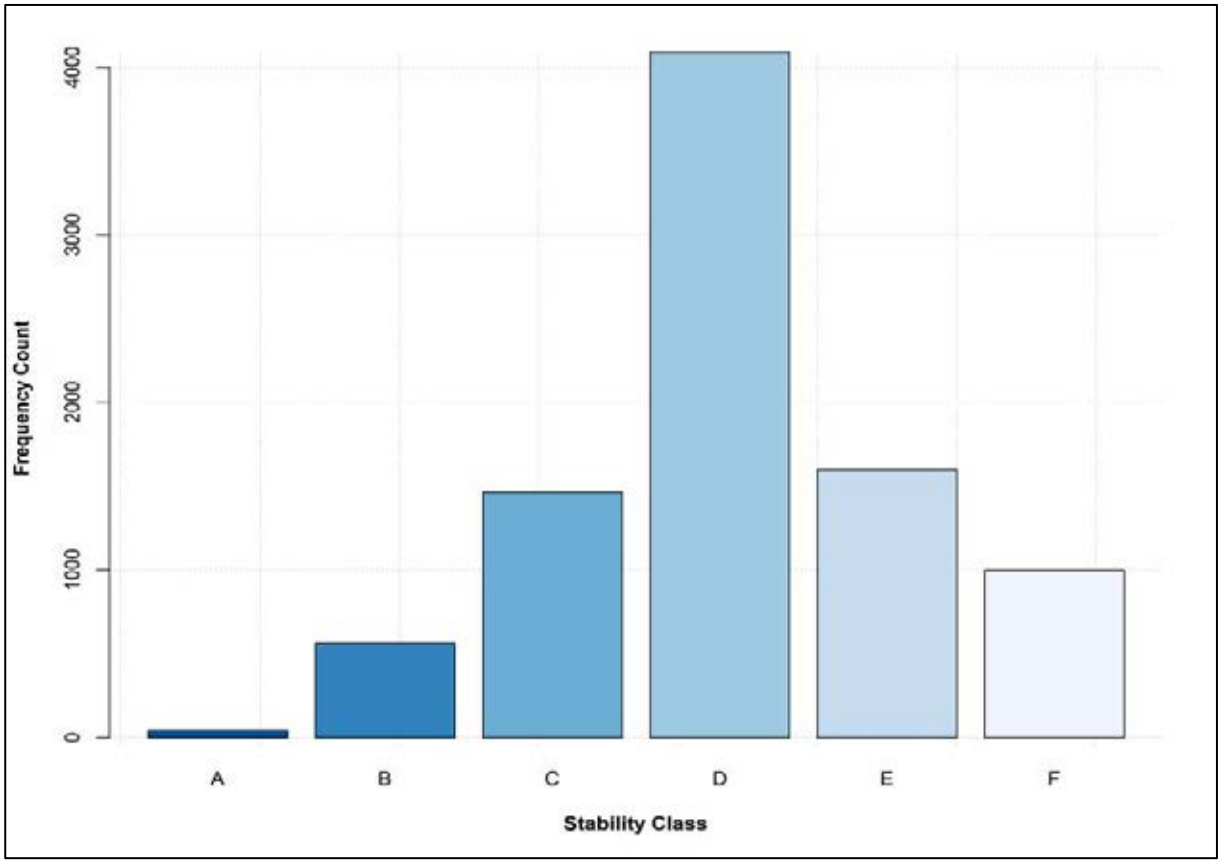


Figure 4.7 **CALMET generated hourly stability class frequency for Toowoomba Range tunnel western portal**

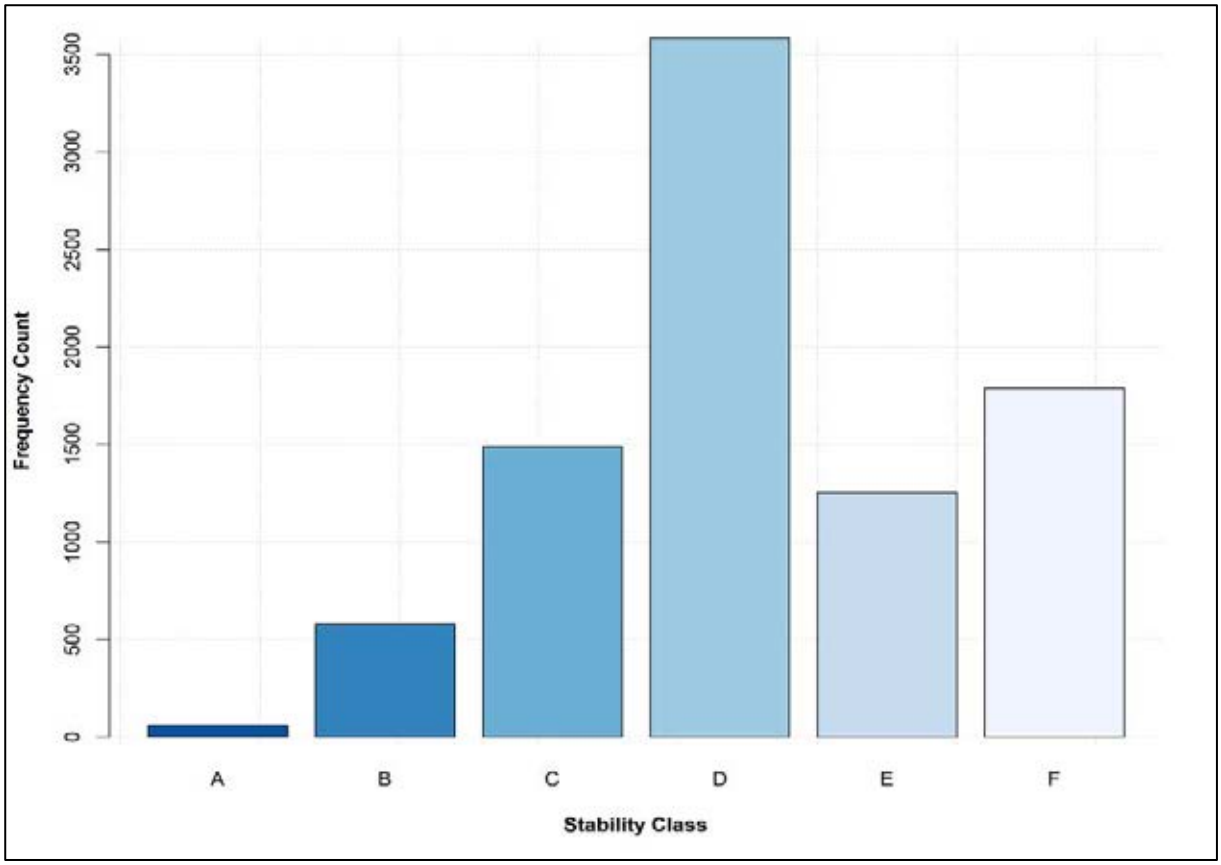


Figure 4.8 **CALMET generated hourly stability class frequency for Toowoomba Range tunnel eastern portal**

4.3.5 Mixing height

Mixing height is estimated within CALMET for stable and convective conditions (respectively), with a minimum mixing height of 50 m. Figure 4.9 to Figure 4.12 present mixing height statistics by hour of day across the meteorological dataset (2013) as generated by CALMET for locations representing the Toowoomba Airport and UQ Gatton BoM stations and the western and eastern portals of the Toowoomba Range tunnel. These results are consistent with general atmospheric processes that show increased vertical mixing with the progression of the day, as well as lower mixing heights during night time. In addition, peak mixing heights are consistent with typical ranges.

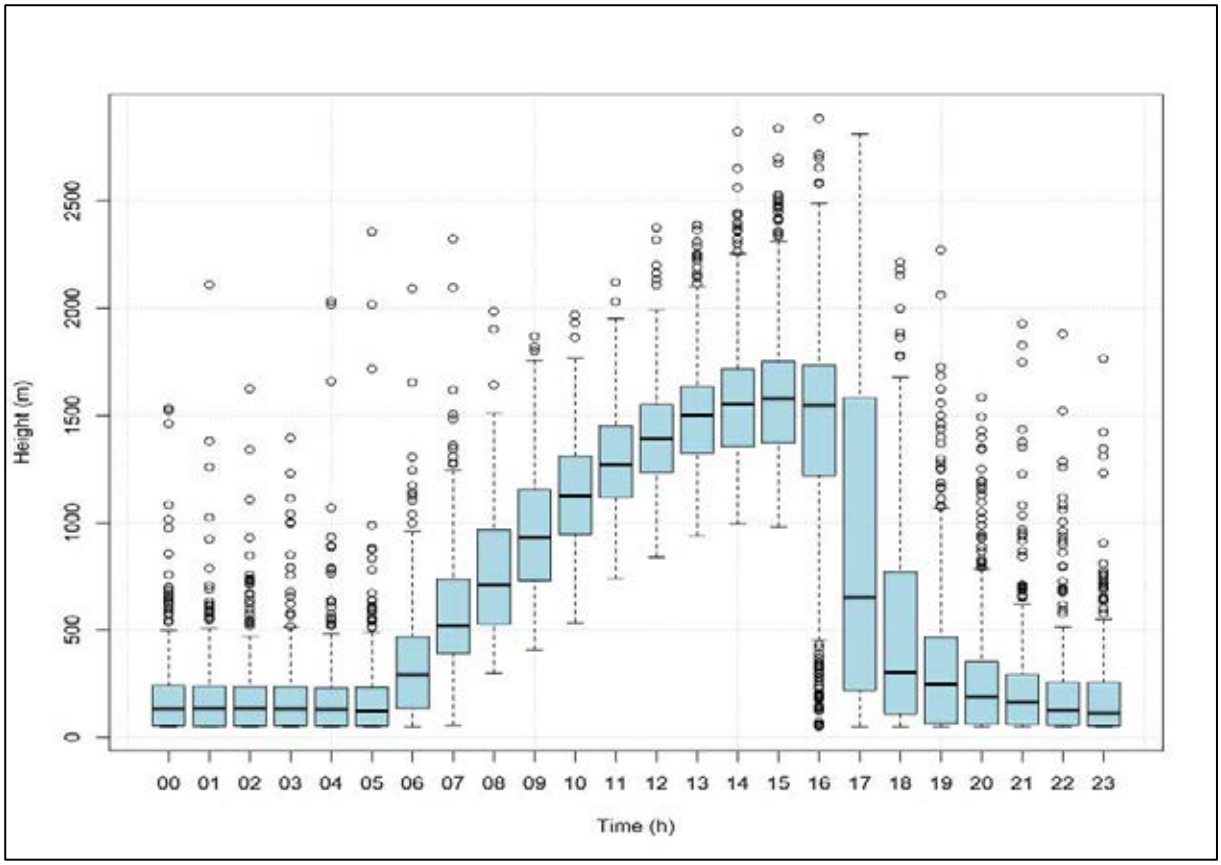


Figure 4.9 **CALMET generated hourly mixing height statistics for University of Queensland Gatton BoM station**

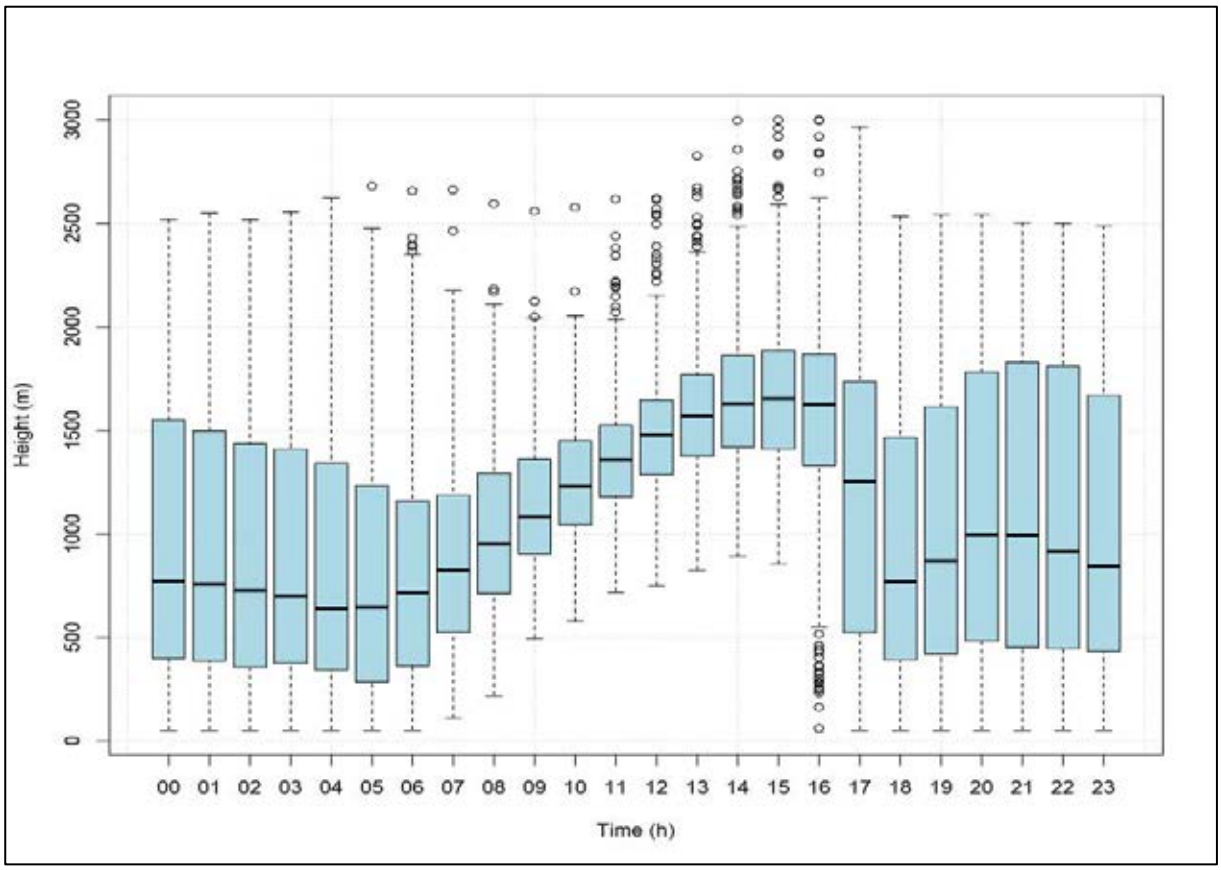


Figure 4.10 **CALMET generated hourly mixing height statistics for Toowoomba Airport BoM station**

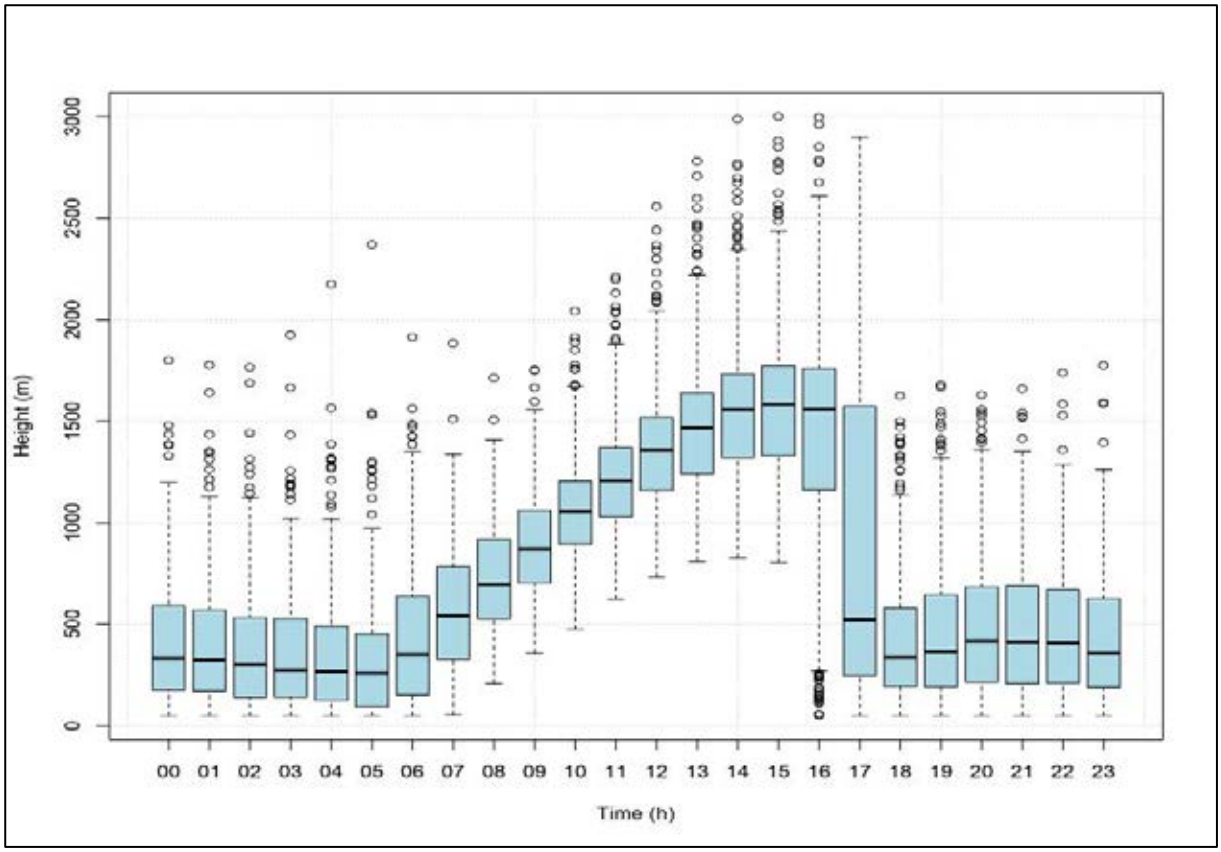


Figure 4.11 **CALMET generated hourly mixing height statistics for the Toowoomba Range tunnel western portal**

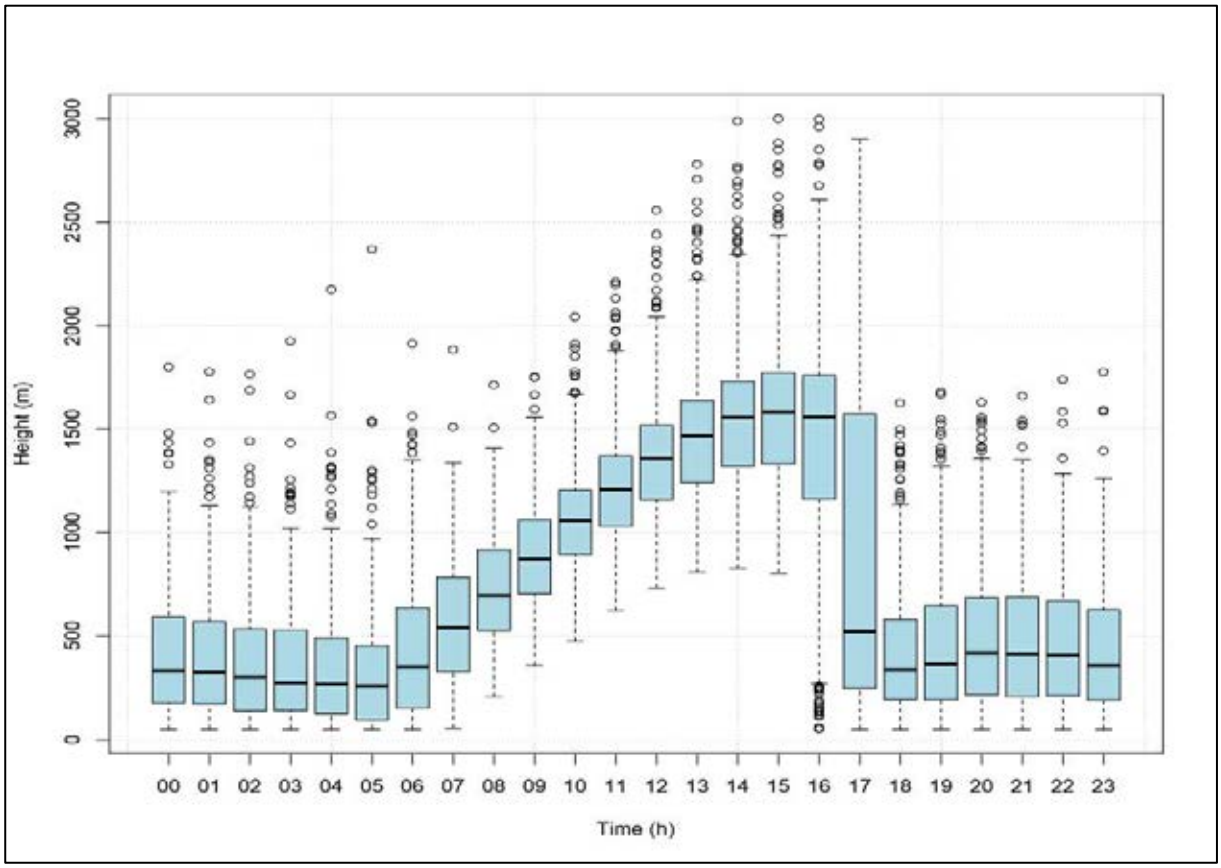


Figure 4.12 **CALMET generated hourly mixing height statistics for Toowoomba Range tunnel eastern portal**

4.4 Background air quality

This section presents the air quality monitoring data reviewed for the assessment.

For PM_{10}, $PM_{2.5}$ and dust deposition, air quality data from the monitoring undertaken for the Inland Rail program has been used as these monitoring locations are closer to the Project than the DES monitoring stations and are considered to provide more representative data.

4.4.1 Data analysis and availability

The DES datasets reviewed in this section have been sourced from DES as validated datasets. However, the datasets do contain gaps that are either missing data or data invalidated by DES (e.g. due to instrument failure or when instruments are shutdown for periodic maintenance). Data that exists in the dataset is considered to be representative of actual pollutant concentrations in the air at the time of monitoring. The datasets consist of hourly averages that have been summarised and analysed for the required averaging periods. Where there was less than 75 per cent available valid data for an averaging period then that averaging period was not calculated. Annual averages were considered valid when at least three of the year quarterly periods had a data availability threshold of at least 75 per cent, as per guidance from NEPM Guideline Data Collection and Handling (NEPM Peer Review Committee 2001).

4.4.2 Particulate matter

4.4.2.1 PM_{10} monitoring data from DES monitoring stations

Particulate matter is measured at three DES monitoring stations in the assessment domain: Flinders View (PM_{10} only), Rocklea and Springwood (both PM_{10} and $PM_{2.5}$). As detailed in Table 4.2, the Flinders View station is located approximately 67 km to the east of the Project, and the Rocklea (87 km) and Springwood (102 km) stations are further away from the Project in similar directions.

Available PM_{10} concentration data from the DES monitoring stations at Flinders View, Rocklea and Springwood (2010 to 2018) has been analysed. Measured 24 hour averages for these stations are presented in Figure 4.5 and compared with the PM_{10} goal of 50 µg/m^3. Annual and 24 hour average PM_{10} concentrations are presented in Table 4.5 and Table 4.6.

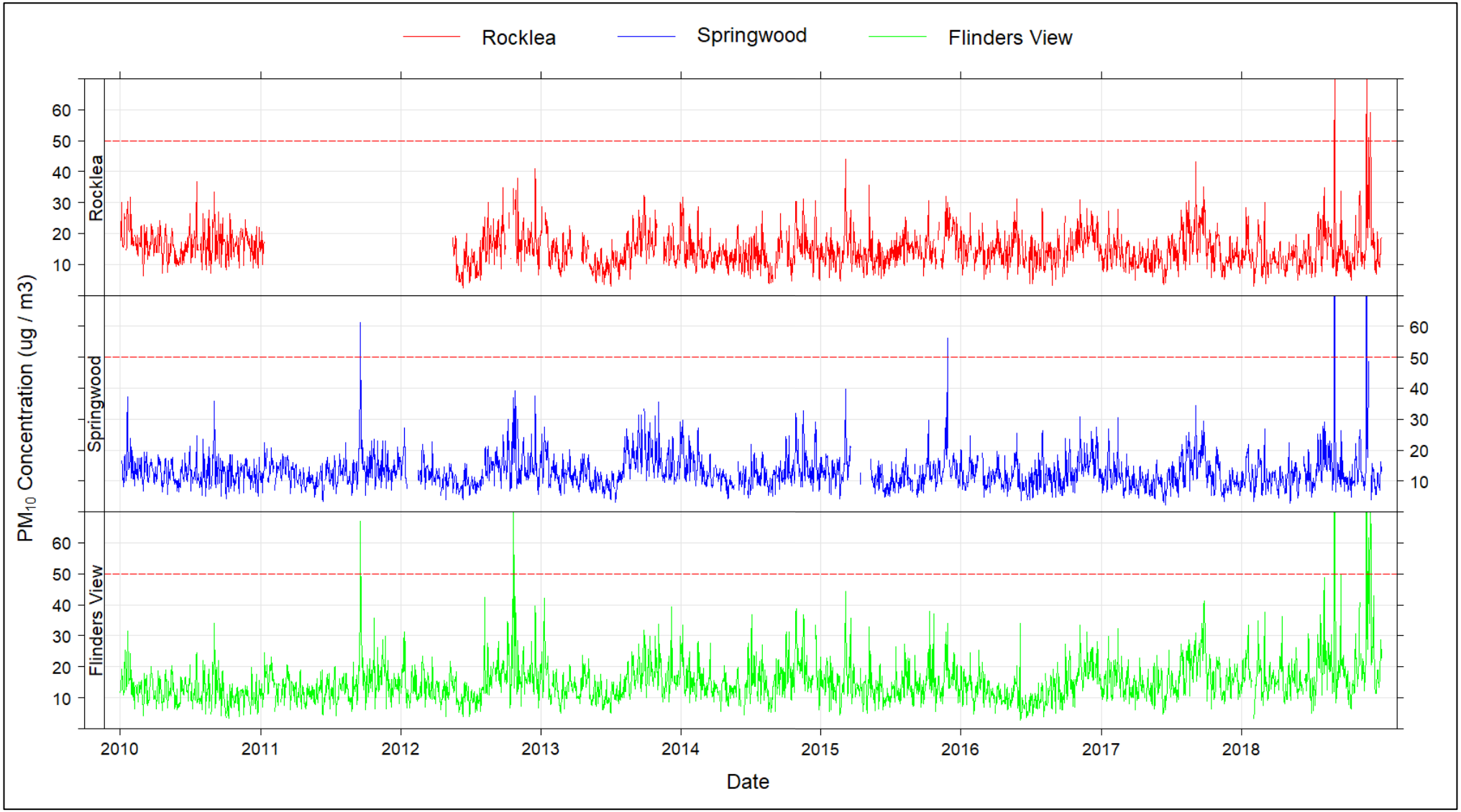


Figure 4.13 **24 hour PM_{10} averages at DES Rocklea, Springwood, and Flinders View monitoring stations**

Figure note: Red dotted line is air quality goal of 50 µg/m^3

Table 4.5 24 hour PM_{10} concentrations (µg/m³) for DES monitoring stations relevant to the AQIA

Monitoring station	2010	2011	2012	2013	2014	2015	2016	2017	2018
Maximum 24 hour average concentration (µg/m³)									
Rocklea	36.8	20.4	41.0	32.2	31.6	44.0	31.2	43.2	**137.2**
Springwood	37.1	**61.2**	39.2	35.4	32.7	**56.1**	30.6	34.4	**126.2**
Flinders View	33.9	**67.0**	**73.8**	42.2	38.8	44.5	34.0	41.2	**189.7**
Number of exceedances (µg/m³)									
Rocklea	0	0	0	0	0	0	0	0	5
Springwood	0	2	0	0	0	1	0	0	3
Flinders View	0	2	2	0	0	0	0	0	6
Highest concentration below criterion (µg/m³)									
Rocklea	36.8	20.4	41.0	32.2	31.6	44.0	31.2	43.2	38.4
Springwood	37.1	39.8	39.2	35.4	32.7	39.6	30.6	34.4	48.6
Flinders View	33.9	35.8	42.7	42.2	38.8	44.5	34.0	41.2	48.8
70th Percentile 24 hour average concentration (µg/m³)									
Rocklea	18.8	17.4	17.9	16.5	15.6	16.8	17.2	16.5	15.9
Springwood	14.5	14.6	14.7	16.0	13.9	14.3	14.3	13.5	15.4
Flinders View	13.9	15.6	16.7	17.2	17.8	16.0	15.4	18.7	20.6
Air quality goal	50								

Table note:
Highest measured concentrations for the period are underlined, with exceedances of the air quality goal presented in bold.

From review of the analysed data, several exceedances of the PM_{10} 24 hour air quality goal concentration (50 µg/m³) were observed for the Springwood, Flinders View and Rocklea monitoring stations. These exceedances were recorded in 2011, 2012, 2015, and 2018, with the highest recorded concentrations measured in 2018 at all three sites. The highest measured concentration at any of the three sites since 2010 was 189.7 µg/m³ (2018) at Flinders View.

According to DES (formerly DSITI (2012, 2013)), all exceedances for 2011 and 2012 at SEQ monitoring sites were the result of bushfire smoke. The exceedance recorded at the Springwood monitoring station in 2015 was cited to be resultant from localised sources, likely an activity being undertaken at the school at which the station is located, and unlikely to be from industry or motor vehicle emissions (DSITI 2016). All exceedances recorded at the Springwood, Flinders View and Rocklea monitoring stations in 2018 were determined to be the result of bushfires, hazard reduction burning and/or dust storms (DES 2019b).

Table 4.6 Annual average PM_{10} concentrations (µg/m³) for DES monitoring stations relevant to the AQIA

Monitoring station	2010	2011	2012	2013	2014	2015	2016	2017	2018
Rocklea	16.7	-	15.1	14.2	14.0	14.9	15.1	14.3	15.0
Springwood	12.9	13.3	13.2	14.2	13.1	12.5	12.4	11.7	13.1
Flinders View	12.2	14.1	15.0	15.0	15.9	14.6	13.1	16.2	20.0
Air quality goal	25								

Table note:
Highest monitored concentrations for the period are underlined.

Analysis of the annual PM_{10} concentrations showed no exceedance of the annual air quality goal (25 µg/m³) at the three relevant DES monitoring stations. Rocklea annual averages ranged from 14.0 µg/m³ (2014) to 16.7 µg/m³ (2010). Concentrations from Springwood were consistently equal to or lower than those recorded at Rocklea, ranging from 11.7 µg/m³ (2017) to 14.2 µg/m³ (2013). Comparatively, Flinders View show greater variability than the other two stations with annual averages at this location ranging from 12.2 µg/m³ (2010) to 20.0 µg/m³ (2018).

4.4.2.2 PM_{10} monitoring data from the Inland Rail air quality monitoring station

Available PM_{10} concentration data from the Inland Rail AQMS from 20 July 2018 to 31 August 2019 has been analysed to provide an estimate of existing PM_{10} concentrations for AQIA study area. Average 24 hour PM_{10} concentrations are presented in Figure 4.14 and compared with the relevant air quality goal. Statistics for the measured PM_{10} concentrations are presented in Table 4.7. Table 4.7 presents the statistical concentrations as measured over the entire monitoring period 20 July 2018 to 31 August 2019, and the statistical concentrations measured over the most recent 12 months of monitoring (1 September 2018 to 31 August 2019).

The monitoring period covered one of the driest summers on record in the region, with several dust storms and bushfires occurring in central and SEQ during this period. These events potentially resulted in exceedances of the 24 hour PM_{10} air quality goal as shown in Figure 4.14.

Overall, the measured data from the Inland Rail AQMS recorded similar PM_{10} concentrations to those measured from the DES monitoring stations. The annual recorded PM_{10} concentration of 17.1 µg/m^3 is lower than the 2018 concentration from the Flinders DES station, but slightly higher than what was recorded at the Rocklea and Springwood DES stations. The maximum 24 hour concentration of 171.4 µg/m^3 was again slightly lower than what was recorded at the Flinders station but higher than measured values at the Rocklea and Springwood stations. From the monitoring results from the DES stations, the measured PM_{10} concentrations from the Inland Rail AQMS can be seen to be consistent with what was measured at other locations in the region.

Based upon location of the Inland Rail AQMS site in relation to the other DES monitoring stations it is considered more representative of the PM_{10} concentrations expected within the AQIA study area. The air quality goal for PM_{10} is assessable over a calendar year and therefore the PM_{10} concentrations measured at the Inland Rail AQMS site for the most recent 12 months of monitoring have been used as background concentrations in the assessment.

Table 4.7 24 hour and period average PM_{10} concentration statistics (µg/m^3) for the Inland Rail AQMS

Monitoring period	Period average	24 hour maximum	24 hour 70th percentile	Number of exceedances of 24 hour criteria	Data capture (per cent)
20 July 2018 to 31 August 2019 (entire period)	17.3	171.4	18.0	9	96
1 September 2018 to 31 August 2019 (most recent 12 months)	17.1	171.4	17.4	9	97
Air quality goals	50 µg/m^3 (24 hour) 25 µg/m^3 (Annual)				

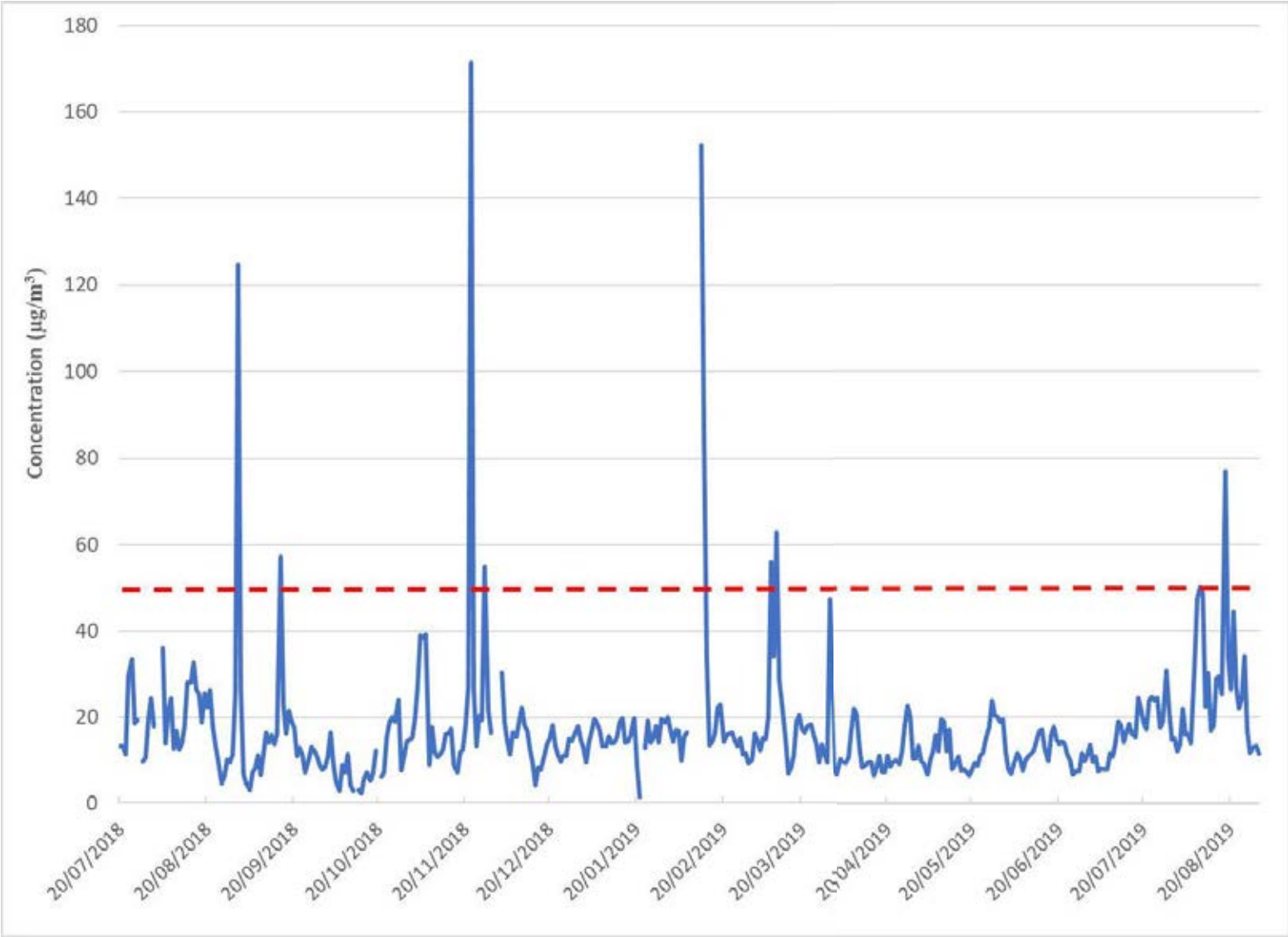


Figure 4.14 **24 hour PM_{10} averages measured at the Inland Rail AQMS**

Figure note: Red dotted line is air quality goal of 50 µg/m^3

4.4.2.3 $PM_{2.5}$ monitoring data from South East Queensland stations

For the measurement of fine particulate matter, especially $PM_{2.5}$, it is important to understand the measurement methodology utilised. At the majority of $PM_{2.5}$ monitoring stations in SEQ, $PM_{2.5}$ is measured utilising dichotomous tapered element oscillation microbalance (TEOM) following Australian Standard methodologies. Select monitoring stations also utilise filter dynamics measurement systems (FDMS), which are an additional attachment to the TEOM measurement instruments.

A FDMS system compensates for the loss of semi-volatile components from the collected particulate matter. This is especially important in the quantification of fine particulate matter, as semi-volatile components can make up a considerable proportion of measured particulate matter. As such, monitoring by TEOM methods utilising a FDMS will likely result in higher measured $PM_{2.5}$ concentrations, presuming there is a significant semi-volatiles component. A significant semi-volatiles component would be expected in urban areas where emissions from industry and motor vehicles are present. Conversely, a TEOM $PM_{2.5}$ particulate monitoring instrument without an installed FDMS may underestimate concentrations, should a significant semi-volatile component be present. Therefore, it is an important consideration when interrogating $PM_{2.5}$ monitoring data to understand the monitoring methodology.

Table 4.8 presents the SEQ monitoring stations and whether FDMS instrumentation is used. Also, the monitoring station type is presented, as classified by the Ambient Air Quality NEPM.

Table 4.8 Monitoring stations types in South East Queensland and installed $PM_{2.5}$ TEOM with FDMS

Site and operator	Station type	2011	2012	2013	2014	2015	2016	2017	2018
		FDMS Installed on $PM_{2.5}$ TEOM							
Rocklea (DES)	GRUB[1.]	n/o	n/o	Yes	Yes	Yes	Yes	Yes	Yes
Springwood (DES)	PMS[2.] – Population average	No	No	No	No	No	Yes[3.]	Yes	Yes
Wynnum North (Industry)	Industry	No	No	No	No	No	No	No	No
Wynnum West (Industry)	Industry	n/o	n/o	n/o	No	No	No	No	No
Cannon Hill (Industry)	Industry	n/o	n/o	n/o	Yes	Yes	Yes	Yes	Yes
Lytton (Industry)	Industry	n/o	n/o	n/o	No	No	No	No	No
South Brisbane (DES)	Peak (roadside)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Woolloongabba (DES)	Peak (roadside)	Yes	Yes	Yes	Yes	n/o	n/o	Yes	Yes

Table notes:

n/o Station was not operating in this year

1 GRUB – Generally representative upper bound.

2 PMS – Performance monitoring station: nominated location to measure achievement against the objective of the Ambient Air Quality NEPM.

3 FDMS installed on $PM_{2.5}$ TEOM at Springwood monitoring station on 25 February 2016.

Based on station type, location and presence of FDMS, Rocklea and Springwood are considered to provide the most appropriate background monitoring data. The most recent eight years of available $PM_{2.5}$ monitoring data have been reviewed for the Rocklea and Springwood stations.

Measured 24 hour average $PM_{2.5}$ concentrations for Rocklea and Springwood are presented in Figure 4.15 and Table 4.9, and are compared against the 24 hour air quality goal (25 µg/m^3). Average annual $PM_{2.5}$ concentrations are presented in Table 4.10 and are compared to the relevant air quality goal (8 µg/m^3).

The 24 hour average $PM_{2.5}$ goal of 25 µg/m^3 was exceeded at Rocklea once in 2017 and twice in 2018. The 24 hour average $PM_{2.5}$ goal was exceeded three times at Springwood in 2011 but has not been exceeded after this year. According to the QLD air monitoring reports from 2011, 2017 and 2018 (DSITI 2012; DES 2018; DES 2019b), all $PM_{2.5}$ exceedances recorded at Rocklea and Springwood were due to bushfires.

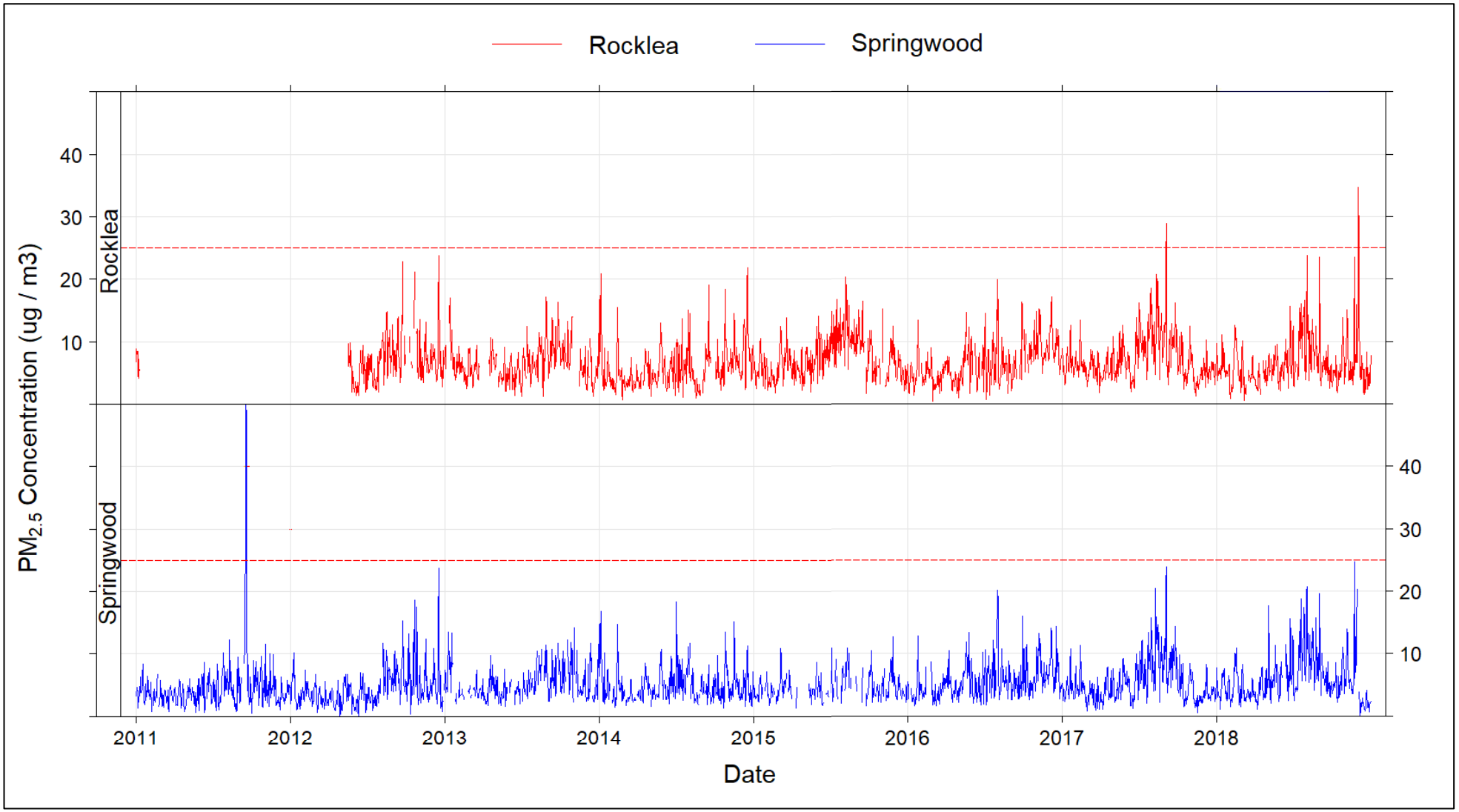


Figure 4.15 **24 hour $PM_{2.5}$ averages at DES Rocklea and Springwood monitoring stations**

Figure note: Red dotted line is air quality goal of 25 µg/m^3

Table 4.9 24 hour $PM_{2.5}$ concentrations (µg/m³) for DES monitoring stations, Rocklea and Springwood

Monitoring station	2011	2012	2013	2014	2015	2016	2017	2018
Maximum 24 hour average concentration (µg/m³)								
Rocklea	8.8	23.7	17.2	21.9	20.3	19.9	**28.9**	**34.7**
Springwood	**51.2**	23.7	14.2	18.4	12.6	20.1	23.9	24.7
Number of exceedances (µg/m³)								
Rocklea	0	0	0	0	0	0	1	2
Springwood	3	0	0	0	0	0	0	0
Highest concentration below criterion (µg/m³)								
Rocklea	8.8	23.7	17.2	21.9	20.3	19.9	23.3	23.8
Springwood	16.4	23.7	14.2	18.4	12.6	20.1	23.9	24.7
70th Percentile 24 hour average concentration (µg/m³)								
Rocklea	-	8.1	7.6	6.6	8.8	7.8	8.3	7.1
Springwood	4.8	5.1	6.0	5.5	5.1	6.4	6.1	6.7
Air quality goal	25							

Table note:
Highest monitored concentrations for the period are underlined, with exceedances of the air quality goal presented in bold.

Table 4.10 shows that the annual average $PM_{2.5}$ goal of 8 µg/m³ has not been exceeded in the period from 2011 to 2018 at either Rocklea or Springwood.

Table 4.10 Annual $PM_{2.5}$ averages (µg/m³) for monitoring stations in South East Queensland

$PM_{2.5}$ annual average (µg/m³)	2011	2012	2013	2014	2015	2016	2017	2018
Rocklea	-	-	6.6	5.8	7.3	6.5	7.3	6.4
Springwood	4.4	4.4	5.2	4.9	4.5	5.7	5.4	5.9
Air quality goal	8							

Table note:
Highest monitored concentrations for the period are underlined, with exceedances of air quality goal presented in bold.

In addition to the monitoring data in Table 4.10, the former QLD EPA (now DES) completed campaign monitoring in North Toowoomba for $PM_{2.5}$ for the years 2006 and 2007. The monitoring recorded annual average $PM_{2.5}$ concentrations of 4.1 µg/m³ (2006) and 3.6 µg/m³ (2007) (QLD EPA 2007, QLD EPA 2008), which are lower than the concentrations measured at Rocklea and Springwood in recent years. The North Toowoomba monitoring station subsequently ended its campaign monitoring of $PM_{2.5}$ in 2008.

4.4.2.4 $PM_{2.5}$ monitoring data from the Inland Rail air quality monitoring station

Available $PM_{2.5}$ concentration data from the Inland Rail AQMS from 20 July 2018 to 31 August 2019 has been analysed to provide an estimate of existing $PM_{2.5}$ concentrations for AQIA study area. The monitoring equipment used at the AQMS were Met One BAM-1020 continuous particulate monitors. These monitors measure particulate matter concentration via beta ray attenuation and therefore do not have the issues with volatiles as discussed for TEOMs. The monitoring data obtained from the AQMS is considered appropriate for use in the assessment.

Average 24 hour $PM_{2.5}$ concentrations are presented in Figure 4.8 and compared with the air quality goal (25 µg/m³). Statistics for the measured $PM_{2.5}$ concentrations are presented in Table 4.11. Table 4.11 presents the statistical concentrations as measured over the entire monitoring period 20 July 2018 to 31 August 2019, and the statistical concentrations measured over the most recent 12 months of monitoring (1 September 2018 to 31 August 2019).

As discussed in Section 4.4.2.2, the monitoring period covered one of the driest summers on record in the region, with several dust storms and bushfires occurring in central and SEQ during this period. These events potentially resulted in exceedances of the 24 hour $PM_{2.5}$ air quality goal as shown in Figure 4.8.

Overall, the measured data from the Inland Rail AQMS recorded similar $PM_{2.5}$ concentrations to those measured from the DES monitoring stations. The maximum 24 hour concentration of 32.2 µg/m^3 was similar to what was recorded at the Rocklea and Springwood stations, which recorded maximum concentrations of 34.7 and 24.7 µg/m^3 in 2018. From the monitoring results from the DES stations, the measured $PM_{2.5}$ concentrations from the Inland Rail AQMS can be seen to be consistent with what was measured at other locations in the region.

Based upon the location of the Inland Rail AQMS site in relation to the existing DES monitoring stations, it is considered more representative of the $PM_{2.5}$ concentrations expected within the AQIA study area. The air quality goals for $PM_{2.5}$ are assessable over a calendar year and therefore the $PM_{2.5}$ concentrations measured at the Inland Rail AQMS site for the most recent 12 months of monitoring (annual average) have been used as background concentrations in the assessment.

Table 4.11 24 hour, annual and period average $PM_{2.5}$ concentration statistics (µg/m^3) for Inland Rail AQMS

Monitoring period	Period average	24 hour maximum	24 hour 70th Percentile	Number of exceedances of 24 hour criteria	Data capture (per cent)
20 July 2018 to 31 August 2019 (entire period)	6.5	32.2	7.5	2	87
1 September 2018 to 31 August 2019 (most recent 12 months) (annual average)	6.5	32.2	7.6	2	90
Air quality goals	25 µg/m^3 (24 hour) 8 µg/m^3 (Annual)				

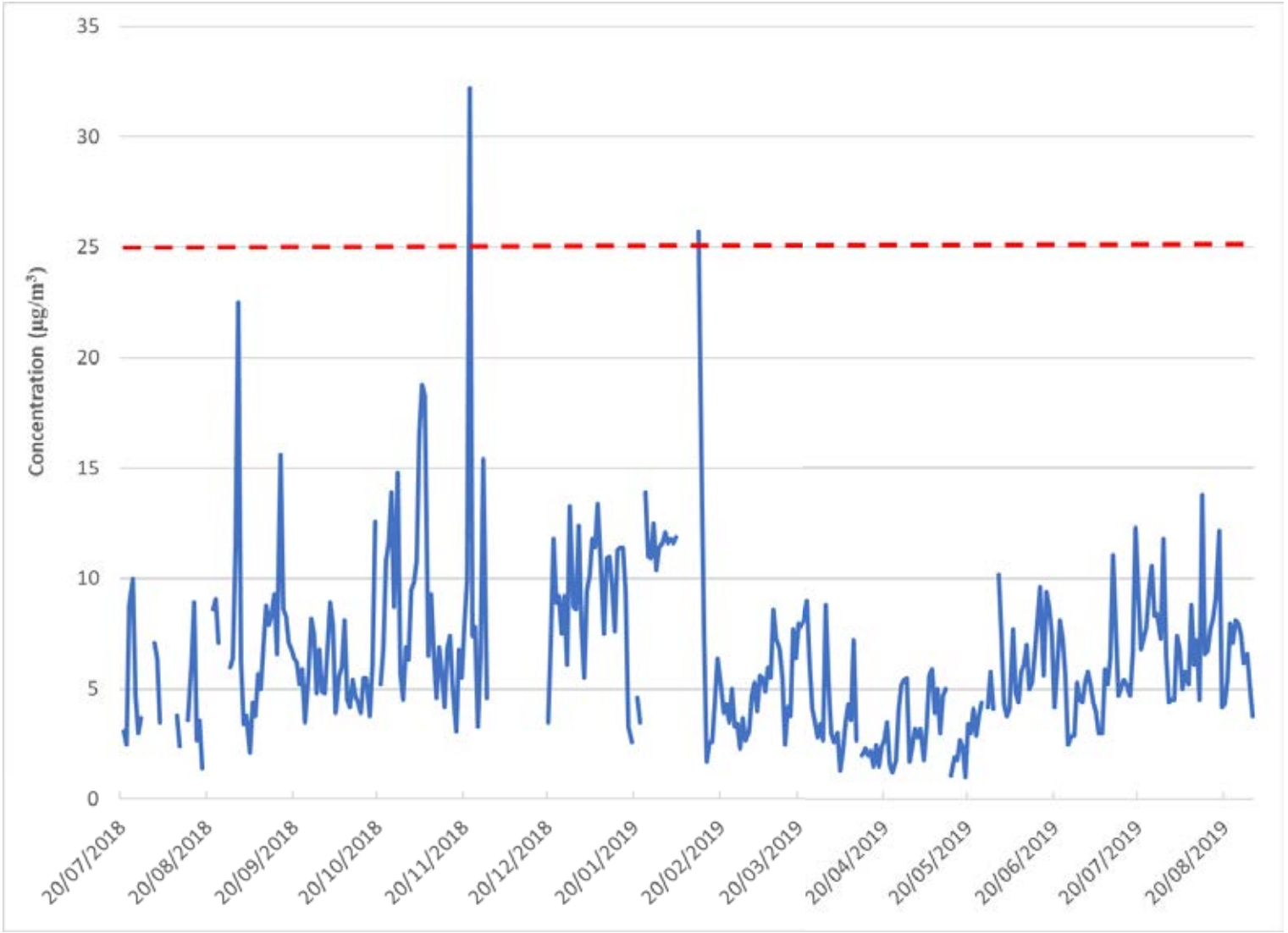


Figure 4.16 **24 hour $PM_{2.5}$ averages measured at the Inland Rail AQMS**

Figure note: Red dotted line is air quality goal of 25 µg/m^3

4.4.2.5 Total suspended particulates

TSP is not measured by DES at the previously mentioned air quality monitoring stations. As such, annual average TSP concentrations have been estimated from measured annual average PM_{10} concentrations using a ratio of 2.5, which is based on a PM_{10}:TSP ratio of 0.4 as reported by the Australian Coal Association Research Program (ACARP 1999). This ratio is commonly applied for AQIAs in QLD. This is considered a conservative estimate and is likely an over estimation of the actual TSP present. However, this is a common ratio for dust and is considered appropriate in the absence of recently monitored data.

Table 4.12 presents the derived annual average TSP concentrations for the Rocklea, Springwood, and Flinders View DES monitoring stations.

Table 4.12 Calculated annual average TSP (µg/m^3) for DES monitoring stations at Rocklea, Springwood and Flinders View

Monitoring station	2011	2012	2013	2014	2015	2016	2017	2017	2018
Rocklea	-	37.8	35.5	35.0	37.3	37.8	35.8	35.8	37.5
Springwood	33.3	33.0	35.5	32.8	31.3	31.0	29.3	29.3	32.8
Flinders View	35.3	37.5	37.5	39.8	36.5	32.8	40.5	40.5	50.0
Air quality goal	90								

Table note:
Highest monitored concentrations for the period are underlined.

The annual average PM_{10} concentration measured at the Inland Rail AQMS monitoring station for the period between 1 September 2018 to 31 August 2019 was 17.1 µg/m^3. Using the TSP:PM_{10} ratio of 2.5, the estimated annual average TSP concentration is 42.8 µg/m^3, which is higher than the 2018 estimated concentrations for Rocklea (37.5 µg/m^3) and Springwood (32.8 µg/m^3), but lower than the estimated concentration for Flinders View (50 µg/m^3). The estimated TSP concentration for Flinders View is significantly higher for 2018 than for previous years, which is expected to be the result of the frequency of bushfires and dust storms during this year.

Based upon location of the Inland Rail AQMS site in relation to the Rocklea, Springwood and Flinders View DES stations, the estimated TSP concentrations using monitoring data from the Inland Rail AQMS site is considered likely to be more representative of the concentrations expected within the AQIA study area. Therefore, the estimated annual average TSP concentration of 42.8 µg/m^3 has been used in the assessment.

4.4.3 Deposited dust

A three-month deposited dust monitoring program was conducted for the Inland Rail Project in 2016, as part of the Yelarbon to Gowrie (Y2G) Preliminary Environmental Assessment (PEA) (AECOM 2017). The Y2G section was a previous alignment option which has been replaced by the Border to Gowrie (B2G) project alignment, though there is a small section of overlap. The monitoring locations represent rural areas with agricultural sources in the surrounding area, similar to the Project alignment. For the urban areas of the Project alignment this may result in conservative estimates of dust deposition rates. However, for the purposes of this AQIA the data collected at these monitoring locations is deemed appropriate.

The monitoring was conducted at four sites in accordance with Australian Standard AS/NZS 3580.10.1:2003 Methods for sampling and analysis of ambient air - Determination of particulate matter - Deposited matter - Gravimetric method (Australian Standards 2003). The locations of each site are shown in Figure 4.1. Two of the monitoring sites (Site 2 Brookstead and Site 3 Pampas) are located adjacent to the current B2G project alignment, with the remaining two sites (Site 4 Mt Tyson and Site 5 Aubigny) located adjacent the superseded Y2G project alignment. The measured dust deposition rates (reported as total insoluble solids) are presented in Table 4.13.

Table 4.13 shows that there were no measured exceedances of the adopted air quality goal of 120 mg/m^2/day. The highest measured rate of 50 mg/m^2/day (measured at Site 3 during May/June 2016) has been adopted as the background concentration for the AQIA study area.

Table 4.13 Measured deposited dust levels

Site	Coordinates	Dust deposition rate (mg/m^2/day)		
Air quality goal		120		
Monitoring period		3/05/2016 -2/06/2016	2/06/2016 -30/06/2016	30/06/2016 -28/07/2016
Site 2 (Brookstead)	-27.7583, 151.4499	27	36	29
Site 3 (Pampas)	-27.7936, 151.4102	50	36	25
Site 4 (Mt Tyson)	-27.5721, 151.5709	20	25	18
Site 5 (Aubigny)	-27.5046, 151.6825	40	36	18

Table note:
Highest monitored dust deposition rate is underlined.

4.4.4 Nitrogen dioxide

Several DES monitoring stations for NO_2 exist in the regional air shed environment, with stations located at Mutdapilly, Flinders View, and North Maclean. The Mutdapilly monitoring site is the closest DES monitoring station to the Project, located approximately 58 km to the east-south-east. Also, the Mutdapilly DES monitoring station has no local emission sources and thus qualifies as an appropriate monitoring location for background NO_2.

Maximum 1 hour and annual average NO_2 concentrations for Mutdapilly, North Maclean, and Flinders View from the period of 2010 to 2018 are presented in Table 4.14 and Table 4.15 respectively.

It is noted that the US EPA's Ozone Limiting Method (OLM) has been used to predict ground level concentrations of NO_2 as discussed in Section 5.2.4. The OLM considers the ambient concentrations of O_3 and NO_2 to determine the resulting cumulative NO_2 concentration with contribution (emissions) from the source under assessment (the Project). To facilitate the use of the OLM, hourly sequential O_3 and NO_2 monitoring data for the year 2013 from the Mutdapilly monitoring station has been used as this is the same year as has been used for the meteorological modelling (refer Section 5.3.2.1).

Table 4.14 1 hour NO_2 maximum concentrations (µg/m^3) for Mutdapilly, North Maclean, and Flinders View

Monitoring station	2010	2011	2012	2013	2014	2015	2016	2017	2018
Maximum 1 hour concentration (µg/m^3)									
Mutdapilly	69.8	55.4	51.3	57.5	59.6	53.4	69.8	69.8	52.7
North Maclean	51.3	47.2	39.0	39.0	51.3	45.2	57.5	53.4	60.2
Flinders View	80.1	82.1	80.1	86.3	102.7	84.2	94.5	90.4	96.0
Air quality goal	250								

Table note:
Highest monitored concentrations for the period are underlined.

Table 4.15 Annual average NO_2 concentrations (µg/m^3) for Mutdapilly, North Maclean, and Flinders View

Monitoring station	2010	2011	2012	2013	2014	2015	2016	2017	2018
Annual average concentration (µg/m^3)									
Mutdapilly	6.5	8.3	7.2	7.7	6.9	6.5	7.6	7.6	6.5
North Maclean	6.1	5.4	5.3	5.8	6.5	6.6	7.0	6.8	6.9
Flinders View	16.4	16.3	13.9	14.4	16.4	13.0	16.3	14.1	14.1
Air quality goal	62								

Table note:
Highest monitored concentrations for the period are underlined.

4.4.5 Volatile organic compounds

Of the air quality monitoring stations located in the assessment domain, toluene, xylenes, and benzene are only recorded at the DES monitoring station in Springwood. The Springwood station is located 102 km to the east of the Project in a built-up residential area close to a major traffic corridor. Table 4.16, Table 4.17, and Table 4.18 present the measured concentrations for toluene, xylenes, and benzene at the Springwood station for the period from 2010 to 2018.

No exceedances of the air quality goal for toluene, xylenes or benzene have been were recorded in the period between 2010 to 2018. The species closest to its air quality goal is annual average benzene, with a measured concentration of 5.2 µg/m^3 in 2017.

Measured concentrations at Springwood have been adopted as the background concentrations for toluene, xylenes, and benzene. The Springwood station is located near a major local road which is expected to be a significant source of VOCs, and the urban location of the station is different to the nature of the AQIA study area. Due to the differing nature of the Springwood station's location, the adopted concentrations from the Springwood station are considered a conservative over-estimate of background concentrations for toluene, xylenes or benzene.

Table 4.16 1 hour toluene concentrations (µg/m^3) at Springwood

Pollutant	2010	2011	2012	2013	2014	2015	2016	2017	2018
Maximum 1 hour concentration (µg/m^3)									
Toluene	71.5	207	182	299	535	497	164	678	156
70th Percentile 1 hour average concentration (µg/m^3)									
Toluene	6.6	7.8	16.4	19.3	20.1	21.8	23.0	8.6	8.3
Air quality goal	1,100[a.]								

Table notes:

a 30-minute average as per the EPP (Air)

Highest monitored concentrations for the period are underlined.

Table 4.17 24 hour toluene and xylenes concentrations (µg/m^3) at Springwood

Pollutant	2010	2011	2012	2013	2014	2015	2016	2017	2018
Maximum 24 hour concentration (µg/m^3)									
Toluene	15.6	18.4	37.3	37.3	88.6	52.9	46.6	107	29.0
Xylenes	25.3	31.1	30.3	18.2	19.1	18.9	28.5	43.8	66.1
70th Percentile 24 hour average concentration (µg/m^3)									
Toluene	6.6	7.6	15.6	18.9	19.0	19.4	21.7	8.9	8.2
Xylenes	13.3	19.5	15.5	13.3	12.6	15.4	16.2	31.5	37.6
Air quality goals	4,100 – Toluene 1,200 – Xylenes								

Table note:

Highest monitored concentrations for the period are underlined.

Table 4.18 Annual average concentrations (µg/m³) at Springwood

Pollutant	2010	2011	2012	2013	2014	2015	2016	2017	2018
Annual average concentration (µg/m³)									
Benzene	2.5	3.9	3.1	2.5	2.4	3.0	3.3	5.2[a]	2.9
Toluene	5.9	6.9	14.0	16.2	17.5	18.5	17.8	8.1	7.9
Xylenes	11.9	18.3	14.6	12.0	11.4	14.2	15.8	26.0	33.8
Air quality goals	5.4 – Benzene 400 – Toluene 950 – Xylenes								

Table note:

Highest monitored concentrations at each station are underlined.

a The background concentration for the Springwood monitoring station for 2017 had been reported by DES as 5.5 µg/m³. FFJV were advised by DES on 17/01/2020 that as part of the review of the 2018 Springwood hourly dataset, DES identified that an incorrect offset had been applied to part of the 2017 Springwood benzene dataset. The corrected 2017 Springwood dataset result is an annual average of 5.2 µg/m³.

4.4.6 Summary of adopted background concentrations

Table 4.19 summarises the background concentrations which have been adopted for the AQIA and the monitoring locations which are the source of the background concentrations. In accordance with the BCC AQPSP (2014) the 70th percentile concentration was selected as the adopted background concentration for assessment of the 24 hour average air quality goals for PM_{10}, $PM_{2.5}$, toluene and xylene, and the 1 hour air quality goals for NO_2 and toluene. Measured annual average concentrations were used as the background concentration for the assessment of pollutants with annual average air quality goals.

Monitoring data for PM_{10} and $PM_{2.5}$ from the Inland Rail AQMS at Charlton (west of Gowrie) has been adopted as the background concentrations for the assessment. The Inland Rail AQMS is located approximately 200 m to the south of the existing QR Western Line, and measured concentrations at the station are influenced by emissions from existing rail traffic. However, the AQMS is still considered the most representative station for the AQIA study area for PM_{10} and $PM_{2.5}$, and the influence of existing rail traffic will result in a conservative estimate of background concentrations.

Table 4.19 Summary of adopted background concentrations

Pollutant	Averaging time and statistic	Air quality goal (µg/m³)	Adopted background concentration (µg/m³)	Year of measurement	Monitoring location
Deposited dust	30-day, maximum	120 mg/m²/day	50 mg/m²/day	2016	Site 3 (Pampas) (located adjacent the B2G project alignment)
NO_2	1 hour, maximum	250	57.5	2013	Mutdapilly
	Annual average	62	7.8	2013	
TSP	Annual average	90	42.8[a.]	2018 and 2019	Inland Rail AQMS (Gowrie)
PM_{10}	24 hour, 70th percentile	50	17.4	2018 and 2019	
	Annual average	25	17.1	2018 and 2019	
$PM_{2.5}$	24 hour, 70th percentile	25	7.6	2018 and 2019	
	Annual average	8	6.5	2018 and 2019	
Benzene	Annual average	5.4	5.2	2017	Springwood[b]
Toluene	1 hour, 70th percentile	1,100	23.0	2016	
	24 hour, 70th percentile	4,100	21.7	2016	
	Annual average	400	18.5	2015	

Pollutant	Averaging time and statistic	Air quality goal (µg/m^3)	Adopted background concentration (µg/m^3)	Year of measurement	Monitoring location
Xylenes	24 hour, 70th percentile	1,200	37.6	2018	
	Annual average	950	33.8	2018	

Table notes:

a Calculated from PM_{10} concentrations measured at the Inland Rail AQMS using a ratio of 2.5 which is based on a PM_{10}:TSP ratio of 0.4 as reported by the Australian Coal Association Research Program (ACARP, 1999).

b Due to the differing nature of the Springwood station's location, the adopted concentrations from the Springwood station are considered a conservative over-estimate of background concentrations for toluene, xylenes or benzene in the AQIA study area.

4.4.7 Assimilative capacity of the receiving environment

The assimilative capacity of the receiving air environment can be quantified by determining the difference between the adopted background concentrations (refer Table 4.19) and the air quality goals defined in Table 3.1. For most pollutants and averaging times, the background concentrations represent less than half of the criteria, indicating a moderate assimilative capacity of the receiving environment. Pollutants that show lower levels of assimilative capacity include the following:

- PM_{10} 17.1 µg/m^3 annual average, representing 68.4 per cent of the 25 µg/m^3 criterion
- $PM_{2.5}$ 6.5 µg/m^3 annual average, representing 81.2 per cent of the 8 µg/m^3 annual criterion
- Benzene 5.2 µg/m^3 annual average, representing 96.3 per cent of the 5.4 µg/m^3 annual criterion.

4.4.8 Consideration of climate change influence on background air quality

Changing climatic conditions due to climate change also has the ability to influence ambient air quality via increased frequency of atypical events such as bushfires and dust storms. However, it is considered difficult to confidently predict the influence of climate change on the duration, frequency and magnitude of extreme air quality events. It is also highlighted that in comparative terms, emissions from the operation of the Project could be considered insignificant in comparison to major regional air quality events such as bushfires and dust storms. Due to the uncertainty which would be inherent in assessing the influence of changing climatic conditions due to climate change on the background air quality, climate change has not been further considered beyond the bushfires and dust storms that are already present in the datasets used to establish the existing environment background concentrations adopted for the AQIA.

4.5 Existing emission sources

4.5.1 National Pollutant Inventory emission sources

The NPI (DAWE 2019) is regulated by the Australian Government. The purpose of the NPI is to track pollution sources within Australia and ensure that the community has access to information about the emission and transfer of toxic substances which may affect them locally.

Facilities which exceed NPI reporting thresholds are required by the Australian Government to submit annual reports of their emissions to air. The NPI has emission estimates for 93 toxic substances and the source and location of these emissions. These substances have been identified as important due to their possible effect on human health and the environment. The data comes from facilities like mines, power stations and factories, as well as other sources. NPI data has a tendency to be a conservative estimate of industry emissions for sites like quarries and mines due to the broad and generalised assumptions made during the emission estimations.

A search of the NPI database for the area within the assessment domain shows that there are five facilities within the AQIA study area which are required to report emissions annually. In addition, there are a further four facilities within 2 km of the boundary of the AQIA study area. These facilities and their reported emissions are described in Table 4.20, with their locations shown in Figure 4.17.

Table 4.20 NPI listed facilities considered in AQIA

Facility name	Industry	Pollutants emitted (kilograms per year (kg/yr))	Coordinates	Approximate distance/ location relative to the Project alignment (km)
Toowoomba Waste Management Centre	Landfill	Benzene (36 kg/yr), CO (79 kg/yr), toluene (590 kg/yr), total VOCs (5,200 kg/yr), xylenes (110 kg/yr)	-27.509063, 151.927316	Project passes beneath the facility
Wetalla Wastewater Treatment Plant (WTP) Stage 4/5	WTP	Ammonia (NH_3) (700 kg/yr)	-27.505986, 151.930013	0.6 km north of Toowoomba Range tunnel
Mt Kynoch WTP	WTP	Chlorine (Cl) (<1 kg/yr)	-27.509325, 151.955169	0.9 km north of Toowoomba Range Tunnel
Harlaxton Quarry	Gravel and sand quarrying	Trace metals (<35 kg/yr)	-27.530157, 151.962578	0.9 km south of the Toowoomba Range tunnel eastern portal
Baillie Henderson Hospital	Back up electricity supply and steam generation	Benzene (<1 kg/yr), CO (1,400 kg/yr), toluene (<1 kg/yr), total VOCs (160 kg/yr), xylenes (<1 kg/yr), NO_x (4,200 kg/yr), PM_{10} (110 kg/yr), $PM_{2.5}$ (110 kg/yr)	-27.524058, 151.935935	1.1 km south of the Toowoomba Range tunnel
Toowoomba Willowburn (Aurizon Operations Limited)	Rollingstock maintenance	Total VOCs (7.6 kg/yr)	-27.539523, 151.947555	2.5 km south of the Toowoomba Range tunnel
Boral Asphalt Charlton	Asphalt plant	CO (4,400 kg/yr), NO_x (9,600 kg/yr), PM_{10} (4,300 kg/yr), $PM_{2.5}$ (230 kg/yr), PAH (43 kg/yr), SO_2 (800 kg/yr), total VOCs (4,500 kg/yr)	-27.527520, 151.842788	3.6 km south of Project alignment
Toowoomba Asphalt Plant	Asphalt plant	CO (2,700 kg/yr), NO_x (6,700 kg/yr), PM_{10} (2,300 kg/yr), $PM_{2.5}$ (48 kg/yr), PAH (8.1 kg/yr), SO_2 (8,800 kg/yr), total VOCs (1,600 kg/yr)	-27.540691, 151.905449	3.6 km south of the Toowoomba Range tunnel
AIR BP Toowoomba	Petroleum product wholesaling	Total VOCs (9.5 kg/yr)	-27.544125, 151.917275	3.8 km south of the Toowoomba Range tunnel

There are no sensitive receptors located in close proximity (within 500 m) to the Toowoomba Waste Management Centre. It is expected that fugitive emissions from the landfill will be accurately represented by assumed background concentrations.

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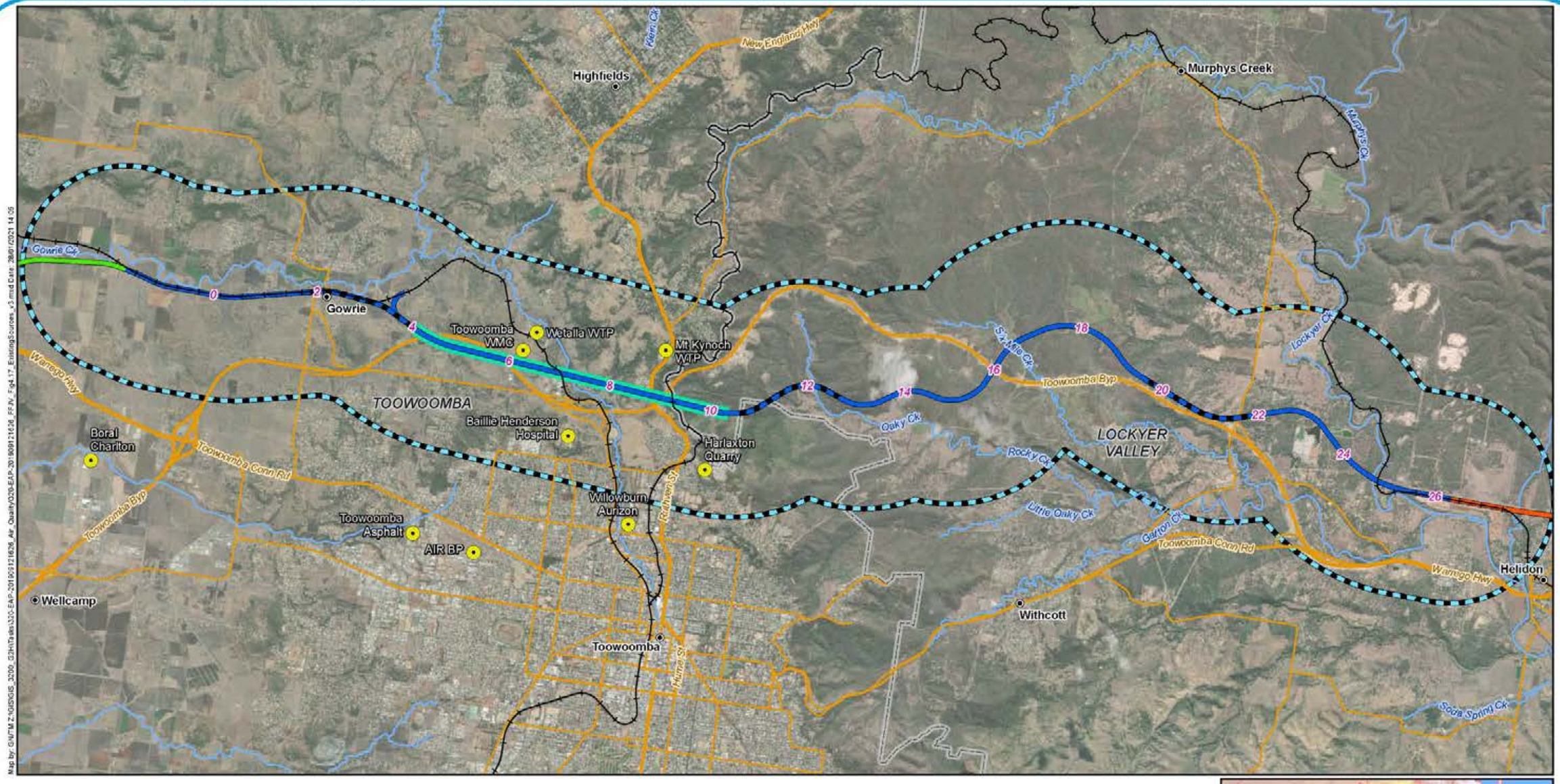

Map by: GN/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190912\626_Air_Quality\320-EAP-20190912\626_FFJV_Fig4.17_ExistingSources_v3.mxd Date: 28/01/2021 14:05

Legend

- Existing emissions sources
- Chainage (km)
- Localities
- B2G project alignment
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Minor roads
- Air Quality study area
- Local Government Areas



A3 scale: 1:80,000

0 1 2 3 4 5km

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Gowrie to Helidon

Figure 4.17: Location of existing emission sources

The Wetalla and Mt Kynoch WTPs are located within 1 km of the Project and emit ammonia (NH_3) and chlorine (Cl) respectively. These pollutants are not emitted by Project sources and therefore are not considered further in the AQIA for the Project.

The Harlaxton Quarry is located approximately 900 m to the south of the eastern tunnel portal, at the north-eastern edge of Toowoomba. The quarry is listed as emitting low levels (<35 kg/yr) of trace metals, which will not be emitted in significant quantity by the Project. It is expected that the quarry also generates dust, though this is not included on the NPI website. The nearest sensitive receptor to the eastern tunnel portal is approximately 730 m to the south-west, with this receptor located approximately 350 m from the nearest active area of the quarry. It is expected that the Projects contribution to pollutant concentrations and deposition levels at the nearest receptors to the quarry will be minimal, and therefore emissions from the quarry have been considered qualitatively for the cumulative assessment of both the construction and operational phases of the Project.

The Baillie Henderson Hospital is located 1.1 km to the south of the Toowoomba Range tunnel and is listed as a moderate source of NO_x emissions. Based on the source of emissions (backup electricity supply and steam generation) it is expected that emissions will not occur on a regular basis and will be released at height via an exhaust stack. It is expected that with an elevated release height of emissions from the hospital, it can be accurately represented by assumed background concentrations and therefore emissions from the hospital have not been considered in detail as part of the AQIA for the Project.

The AIR BP and Toowoomba Willowburn facilities are located 3.8 km and 2.5 km from the Project and emit a low quantity of total VOCs (<10 kg/yr). Based on the distance to the Project and the low level of emissions these sources are not required to be considered in detail as part of the AQIA for the Project.

The asphalt plants located in Toowoomba and Charlton are significant pollution sources, and emit NO_x, PM_{10}, $PM_{2.5}$ and VOCs which are common to emissions from the Project. However, both asphalt plants are located at a significant distance from the Project (3.6 km for each plant respectively) and emissions from the plants are unlikely to impact the receptors which have the potential to be impacted by the Project. It is expected that emissions from the asphalt plants will be accurately represented by assumed background concentrations and therefore have not been considered in detail as part of the AQIA for the Project.

4.5.2 Other local emission sources

In addition to the NPI sources listed in Table 4.20, other local emission sources will include ERAs, local vehicle traffic and existing rail traffic on the QR West Moreton System.

Sites with ERAs which do not report to the NPI emit lower quantities of pollutants than the major polluters that are required to report to the NPI. As such, it is expected that emissions from ERAs will be adequately represented by the assumed background concentrations.

Based on the nature of the roads in the AQIA study area, emissions from local vehicle traffic are not expected to be significant with the exception of the Toowoomba Bypass, which is discussed in Section 5.3.1.7.

The Project alignment is co-located with the existing QR West Moreton System for approximately 4.8 km in the Gowrie area (Western Line) and 800 m in the Helidon area (Main Line). There is also an existing crossing loop on the West Moreton System at Gowrie. Emissions from trains operating on the existing QR network will currently be influencing the background air quality in the AQIA study area. However, emissions from existing train travel along the QR West Moreton System rail corridor have not been included in the assumed background concentrations as it has been assumed for the operational modelling scenarios that all trains, including those existing services which currently use the QR West Moreton System rail corridor, will travel along the Project and therefore would be included in the Project contribution to cumulative concentrations.

4.6 Terrain and land use

The AQIA study area includes the Gowrie Creek floodplain and the Toowoomba plateau, along with the rugged topography of the Great Dividing Range/Toowoomba Range. The landscape, from Gowrie, approaching the Great Dividing Range/Toowoomba Range consists of a gentle incline before reaching peak elevation of approximately 644.5 m Australian Height Datum (AHD), as the alignment traverses under (depth of ~200m) the New England Highway and Toowoomba Bypass at Mount Kynoch.

A steep drop in elevation occurs after the Project alignment passes the crest of the Toowoomba Range to the east with periodic and isolated peaks featuring with reducing elevation as the alignment reaches Helidon. The lowest elevation for the rail alignment occurs at Lockyer Creek, 1 km to the west of Helidon, with an approximate elevation of 148.5 m AHD.

The influence of terrain on wind flows and dispersion and the influence of land use on surface roughness has been considered in the meteorological modelling undertaken for the assessment as discussed in Section 5.3.2. The height of the train emission sources included in the model is based on the proposed design elevations for the alignment and includes proposed bridges and viaducts.

The Project is predominantly located in a rural setting with the Gowrie Creek floodplain largely cleared for agricultural or urban purposes. The eastern portion associated with foothills of the Great Dividing Range/Toowoomba Range is predominantly native vegetation associated with large rural residential blocks and a sparse settlement pattern.

Despite the rural setting the Project passes through Gowrie and is located in close proximity to suburbs of Toowoomba, some of which overlook the Project. Suburbs include Cotswold Hills, Blue Mountain Heights, Harlaxton and Mount Lofty. The Project is not located in close proximity to any townships of Lockyer Valley, however the Project passes near residential areas of Lockyer and Helidon Spa.

Land use in proximity to the Project is predominantly mapped as grazing land, combined with other agricultural land uses including cropping, irrigated seasonal horticulture and other land uses including residential, other minimal use (consisting of areas of land that are largely unused, for example, residual native cover vegetation) and services. The Project also traverses infrastructure, including the Toowoomba Bypass and New England Highway, the West Moreton System rail corridor, main roads, local roads, gas pipelines and other utilities.

Notable land uses, which include areas where there are recreational and commercial uses as well as land uses of State significance, include the Gowrie State School, Wetalla wastewater treatment plant, Baillie Henderson Hospital, Harlaxton Quarry, Withcott Quarry, Withcott Seedlings and the Helidon Magazine Reserve.

4.7 Sensitive receptors

Sensitive receptors in the AQIA study area were identified as per the EP Act Air Guideline. As per the EP Act Air Guideline, a sensitive receptor can include the following:

- A dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises
- A motel, hotel or hostel
- A kindergarten, school, university or other educational institution
- A medical centre or hospital
- A protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area
- A public park or garden
- A place used as a workplace including an office for business or commercial purposes.

The Project is primarily situated within a rural setting, but traverses in close proximity to urban areas of the Toowoomba including Gowrie and residential areas in the Lockyer Valley. Based on desktop review of aerial imagery, the predominant sensitive receptor type in the AQIA study area are residential dwellings. In addition to assessing air quality impacts at residential dwellings, the potential impact of Project air emissions on potable water tanks and drinking water quality at residential dwellings has also been considered.

The EP Act Air Guideline definition for sensitive receptors includes areas protected under the *Nature Conservation Act 1992* or the *Marine Parks Act 2004*, or World Heritage Areas. The *Nature Conservation Act 1992* defines protected areas as national parks, conservation parks, resource reserves, special wildlife reserves, nature refuges or coordinated conservation areas. In addition to the EP Act Air Guideline definition, the Air EIS Information Guideline (DES 2020) states that "remnant and regrowth ecosystems of all types" may be affected by the dispersal of air contaminants and should be considered.

There are no World Heritage Areas or areas protected under the *Nature Conservation Act 1992* or the *Marine Parks Act 2004* located within the AQIA study area. The nearest protected area is the Lockyer Resource Reserve, with the southern-most section of the reserve located approximately 2.6 km north of the eastern extent of the Project alignment. As there are no World Heritage Areas or protected areas within the AQIA study area, significant impacts to these areas are considered unlikely and impacts to these areas have not been considered in the assessment.

Based on the broad inclusion of "remnant and regrowth ecosystems of all types" in the Air EIS Information Guideline (DES 2020), the impact of NO_2 on these ecosystems has been investigated through the assessment of predicted annual average NO_2 concentrations against the EPP (Air) annual average goal NO_2 for the protection of the health and biodiversity of ecosystems (33 µg/m^3) (refer Table 3.1).

With respect to agricultural land uses, the AQIA has considered Withcott Seedlings, which is a commercial agricultural business which produces vegetable seedlings. Withcott Seedlings is located on Postmans Ridge Road at Withcott, and is a certified organic supplier of seedlings. The Project traverses the facility, on viaduct, between two large water storage dams. Impacts on Withcott Seedlings from air emissions associated with the Project have been considered.

Discrete receptor points have been included for residential sensitive receptors and Withcott Seedlings, with discrete receptor points modelled at ground level (0 m above ground) as per the requirements of the EP Act Air Guideline. A total of 2,829 discrete receptor points have been included in the model at a height of 0m above ground. In addition to these discrete receptor points, grids of receptor points (grid receptors) have been included in the modelling (also at 0 m above ground) to understand the spatial impact of Project air emissions and to facilitate the generation of concentration contours. Due to the spatial distribution of remnant and regrowth ecosystems, impacts to these ecological receptors have been assessed considering modelled results for grid receptors and analysis of concentration contour plots.

Figure 4.18 shows the location of sensitive receptors (discrete receptors) considered in the AQIA. Appendix B provides further detailed figures presenting receptor locations. Each sensitive receptor within the AQIA study area was identified using a combination of QLD land property information and interrogation of aerial imagery was used to capture any additional sensitive receptors.

It should be noted that the number of sensitive receptors in the AQIA study area may have minor variations as the Project progresses.

There are eight receptors (receptors R_386, R_447, R_888, R_898, R_923, R_931, R_2296 and R_2323) located within the Project disturbance footprint. Of these eight receptors, seven have been considered in the assessment of the construction phase (e.g. it has been assumed for assessment purposes that these receptors are inhabited during construction of the Project). There is one receptor (receptor R_2323) which represents a potential site office for a laydown area which will be used by the Project during construction, and this receptor has not been considered in the assessment of the construction phase.

There are six receptors located in the permanent disturbance footprint (receptors R_386, R_447, R_888, R_898, R_923 and R_931). These six receptors have been considered in the assessment of the operation phase.

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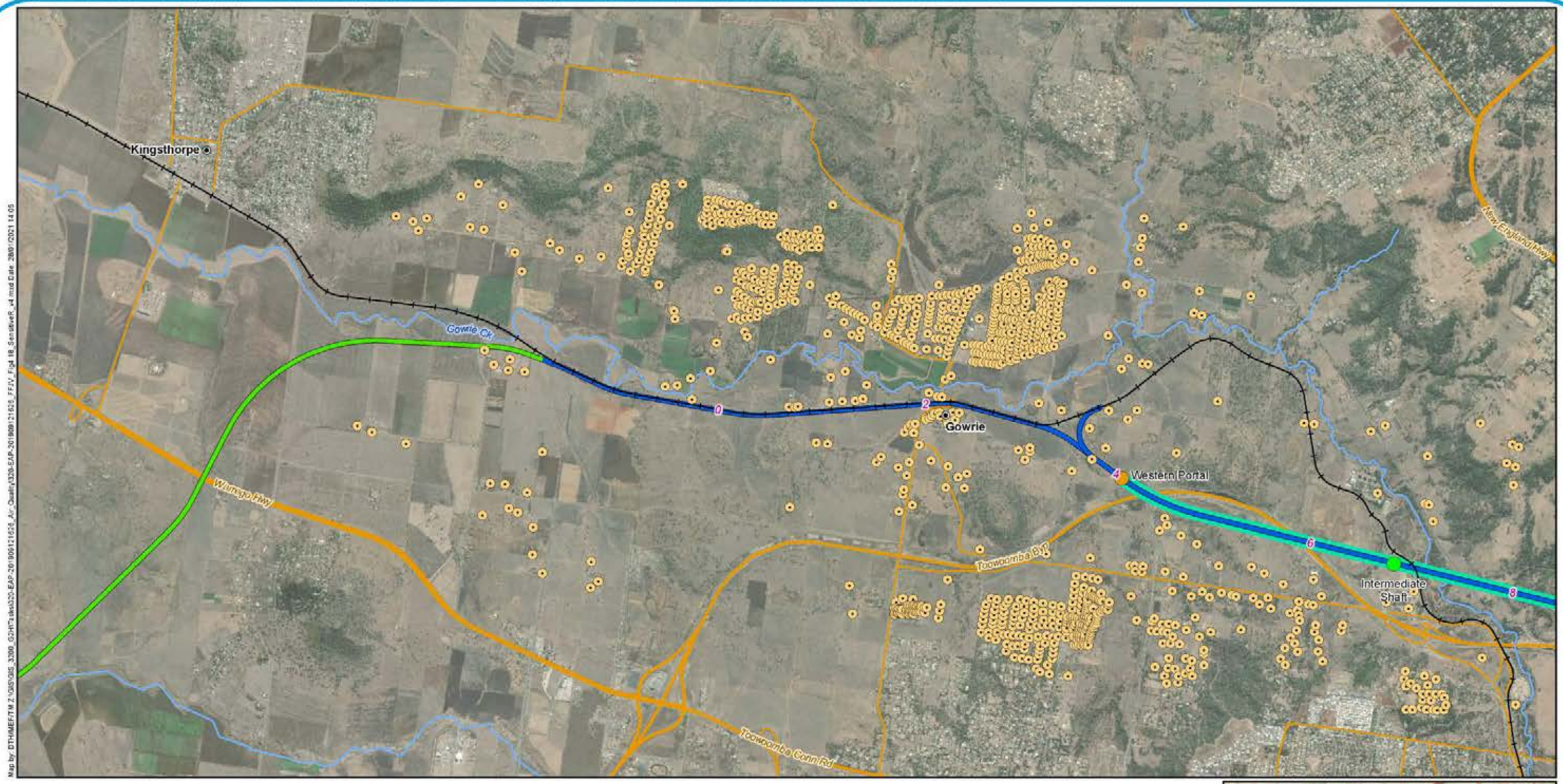

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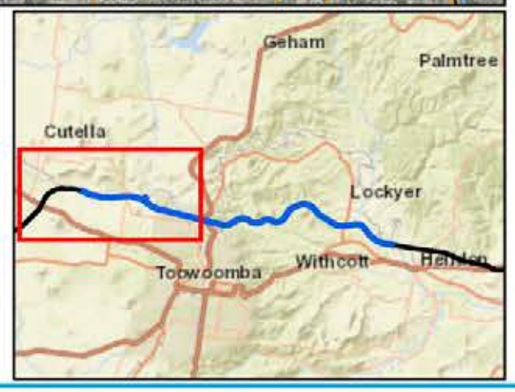
Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Intermediate ventilation shaft
- Portal
- B2G project alignment
- G2H project alignment
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Minor roads



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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Gowrie to Helidon
Figure 4.18a:
Identified sensitive receptor locations

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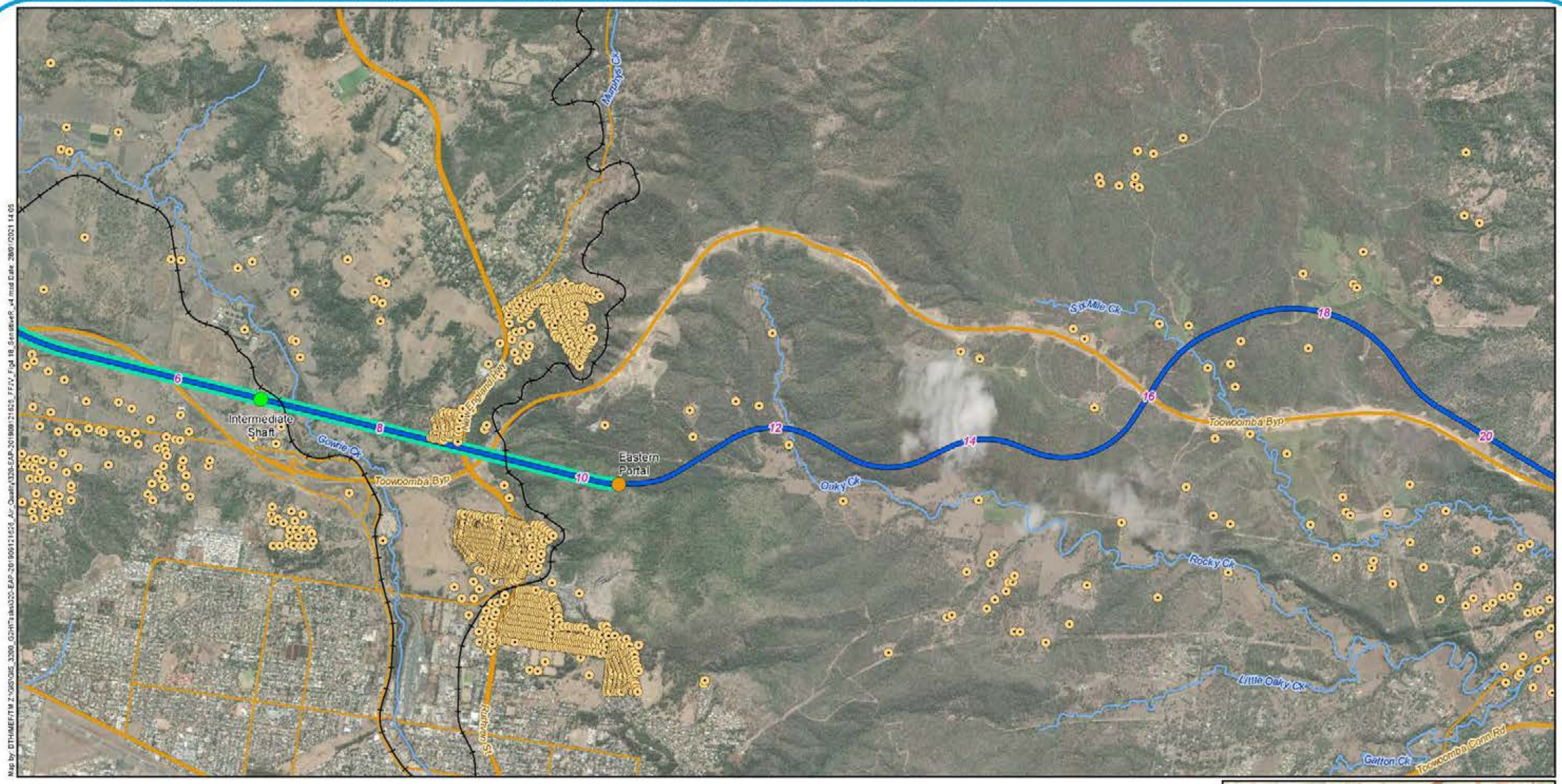

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Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Intermediate ventilation shaft
- Portal
- G2H project alignment
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Minor roads



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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Gowrie to Helidon
Figure 4.18b:
Identified sensitive receptor locations

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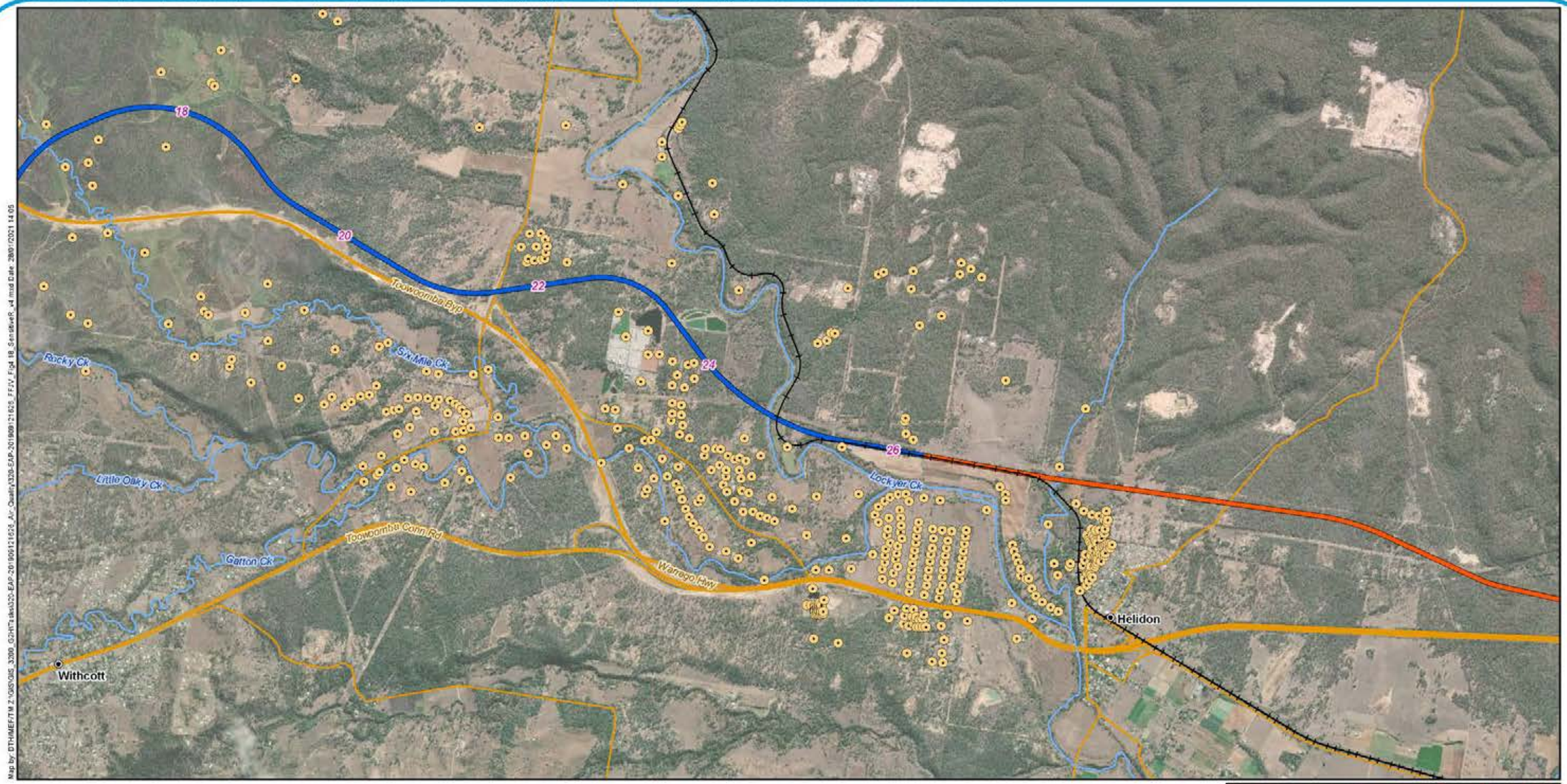

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Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- G2H project alignment
- H2C project alignment
- Existing rail
- Tunnel
- Watercourses
- Major roads
- Minor roads



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 11/03/2020 Version: 3
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Figure 4.18c:
Identified sensitive receptor locations

5 Assessment methodology

The AQIA methodology for the Project includes the following key elements:

- Qualitative impact assessment for the construction phase to estimate potential air quality impacts
- Potential for commissioning phase impacts are discussed in Section 5.2
- Primarily quantitative impact assessment for the operational phase to estimate potential air quality cumulative impacts. Some minor emissions sources are assessed qualitatively
- Potential for decommissioning phase impacts are discussed in Section 5.5
- Identification of mitigation measures
- Assessment of the residual impact with the inclusion of the identified mitigation measures.

Early engagement on the draft ToR resulted in the EIS including assessment of potential pollutants in water tanks against drinking water guidelines. Dust generation during construction and operation have also been key matters raised by stakeholders and the community, which has helped to inform the development of mitigation measures for both construction and operation. This includes consideration of both onsite construction activities and the movement of construction vehicles and equipment to and within the works areas. The methodology used to assess construction and operation impacts is described in this section.

5.1 Construction air quality assessment

Construction emissions for large linear infrastructure projects are complex due to the number of construction activities, the distribution of sites across a large geographical area, and the transitory nature of many individual construction activities at particular locations. As such, the potential construction air quality impacts associated with the Project were assessed by describing the nature of proposed works, plant and equipment, potential emissions sources and levels. Potential dust impacts on surrounding sensitive receptors have been determined through a qualitative risk assessment.

The highest proportion of construction emissions results from mechanical activity, e.g. material movement or mobile equipment travel, which typically generate coarser particulate emissions (PM_{10} and TSP). Airborne PM_{10} and deposited dust (TSP) are the main pollutants of concern for construction activities and these pollutant species are the focus of the assessment for construction dust.

$PM_{2.5}$ is typically emitted in minor quantities from mechanical sources, and is more predominant from combustion point sources (i.e. combustion engines). Point source emissions of combustion gases (e.g. NO_x and CO) and $PM_{2.5}$ from diesel construction vehicles, mobile plant and generators will be significantly lower than particulate emissions from construction activities. Emissions of combustion gases and $PM_{2.5}$ are considered unlikely to result in exceedance of air quality goals or cause nuisance to sensitive receptors and therefore have not been assessed in detail. However, mitigation measures for these sources have been identified to minimise the potential for impacts on sensitive receptors.

The assessment methodology used for the construction phase is the 2014 UK IAQM Guidance on the assessment of dust from demolition and construction (UK IAQM 2014). The IAQM process is a four-step risk-based assessment of dust emissions associated with demolition, including land clearing and earth moving, and construction activities. The construction assessment steps are as follows:

- Step 1 – Screening assessment
- Step 2 – Dust risk assessment
- Step 3 – Management strategies
- Step 4 – Reassessment.

The methodology of the IAQM risk assessment procedure is tailored specifically to the assessment of emissions to air from construction activities. The IAQM risk assessment method considers the sensitivity of the AQIA study area to air quality impacts based on separation distance and existing air quality, and the potential risk of adverse impacts based on the emissions magnitude of the construction activities. The IAQM method is considered the most appropriate risk assessment method for the assessment of construction impacts and has been used for the Project.

A breakdown of each step and the associated findings of the dust impact assessment are detailed in Section 6.

Construction of the tunnel has been included in the overall assessment of construction impact as it will occur during the same construction program.

In addition to construction dust, odour and VOCs will be emitted as fugitive emissions from fuel tanks located at laydown areas. Impacts from fuel storage have been assessed in Section 6.2 following guidance from the BCC AQPSP (2014) and Vic EPA Recommended separation distances for industrial residual air emissions (2013).

Detailed dispersion modelling of construction is not typically undertaken as construction activity is difficult to forecast accurately and emissions are typically well controlled by standard construction practices and mitigation controls. The qualitative assessment method applied for the assessment of construction phase impacts is considered appropriate for the Project and is consistent with industry standard methodology.

5.2 Commissioning phase air quality assessment

The commissioning phase of the project will involve testing and checking the rail line and communication and signalling systems to ensure that all systems and infrastructure are designed, installed and operating according to ARTC's operational requirements. All rail system commissioning activities will be undertaken in accordance with an approved Test and Commissioning Plan developed by the construction contractor and approved by ARTC.

Air emissions during the commissioning phase of the Project are anticipated to be minor and are expected to be limited to combustion engine emissions from transport vehicles and limited dust emissions from vehicle travel on unsealed roads.

In regards to train travel on the line, emissions from the commissioning phase of the Project will be significantly lower than emissions during the operational phase.

Air emissions from the commissioning phase of the Project are expected to be insignificant and are considered unlikely to generate nuisance or risk exceedance of the Projects air quality goals and therefore have not been assessed.

5.3 Operations phase air quality assessment

This section outlines the approach taken to the modelling and assessment of the operational air quality implications of the Project, including:

- Emissions inventory and assessment assumptions
- The dispersion modelling methodology, including the software packages and meteorological data used, the scenarios assessed and model inputs
- The air emission sources included in the modelling
- The source parameters used in the modelling
- The use of terrain and land use data
- The method applied for the conversion of NO_x to NO_2, and
- Limitations of the assessment.

Detailed discussion of the dispersion models used in the assessment is provided in Appendix C.

5.3.1 Emissions inventory

To quantify the emissions for diesel locomotives and coal wagons, for both travel along the Project alignment and within the Toowoomba Range tunnel, an emissions inventory was developed. The key pollutants of interest included in the emissions inventory for diesel locomotives and coal wagons are TSP, PM_{10}, $PM_{2.5}$, NO_x and VOCs. These emissions are applicable to the tunnel's operation. The emissions inventory was based on the engine types, rail traffic quantities and speed (both in terms of engine emissions and surface friction velocity on the coal wagons).

5.3.1.1 Diesel locomotive emissions

Emission factors

Emission factors have been sourced from emissions testing completed on locomotives by the NSW EPA and rated emission standards published by the US EPA and EMEP/EEA as discussed in Section 2.3. The US EPA and EEA emission factors are the most accurate source of available emissions data for the locomotives and are considered appropriate for use in the assessment. Table 5.1 presents the referenced emissions factors on a grams per kilowatt hour basis (g/kWh).

Table 5.1 Locomotive emissions factors

Locomotive	NR Class		SCT/LDP	82 Class	PR22L
	Cycle weighted	Idling			
Locomotive Max Power (kW)	2,917		3,350	2,425	1,640
Rated Emission Standard	US EPA – Tier 0	-	US EPA – Tier 1	US EPA – Tier 0	EURO IIIA
Total Particulates (g/kWh)	0.101	1.09	0.60	0.8	0.20
NO_x (g/kWh)	16.6	43.7	9.92	12.74	6.00
Total Hydrocarbons (THC)[1] (g/kWh)	0.519	4.66	0.74	1.34	0.50
Source	US EPA Emissions Limits – Line Haul Locomotives	Diesel Locomotive Fuel Efficiency & Emission Testing Report Nov 2016 by ABMARC for NSW EPA (NR121 & 93 Class)	US EPA Emissions Limits – Line Haul Locomotives		EU Emissions Standards – Nonroad Engines

Table note:

1 VOCs are a subset of THC. For this assessment 100 per cent of THC emissions are assumed to be VOCs.

Engine power and notch setting

In diesel locomotive operation, engine power is determined by the notch setting, which ranges from notches one through eight (Spiryagin et al. 2016). During normal operation a diesel locomotive will progress through the notch settings to accelerate to the required rail line speeds. The locomotive would then operate at a certain notch setting that is dependent on the power output required to maintain the required rail speed.

The engine power at each notch setting differs greatly, for example, the power rating at notch eight is equivalent to 100 per cent of the maximum locomotive engine power. Whereas, at notch four the engine power would be closer to 35 per cent of maximum locomotive engine power (Spiryagin et al. 2015). Therefore it is important to know the power ratings and time speed at each notch setting to provide an accurate estimate of diesel locomotive emissions.

Power ratings for each notch setting for the proposed diesel locomotive engines were not available at the time of the assessment; therefore, a review of literature was completed. The notch setting and percentage of engine power for each setting as obtained via literature review is summarised in Table 5.2.

Table 5.2 Power ratings for locomotive notch settings or operating mode from various sources

Notch setting or operating mode	**Percentage of maximum locomotive engine power**					
Source	**Spiryagin et al. (2016)[a.]**	**Spiryagin et al. (2015)**	**StarCrest Consulting Group (2008)**	**Therma-Dynamics Rail LLC (2014)**	**Kim et al. (2017)**	**Casadei & Maggioni (2016)**
Idle	0.0 per cent	0.0 per cent (0 kW)	0.8 per cent (14 hp)	2.2 per cent (69 hp)	9.1 per cent (216 kW)	**2.3 per cent (74.6 bhp)**
Dynamic Braking	-	-	**3.6 per cent (67 hp)**	0.5 per cent (17 hp)	-	-
Notch 1	1.6 per cent	**4.8 per cent (133 kW)**	4.5 per cent (83 hp)	3.3 per cent (105 hp)	15.7 per cent (370 kW)	-
Notch 2	6.3 per cent	**10.7 per cent (294 kW)**	13.5 per cent (249 hp)	12.5 per cent (395 hp)	24.4 per cent (576 kW)	11.2 per cent (359 bhp)
Notch 3	14.1 per cent	**24.1 per cent (665 kW)**	26.4 per cent (487 hp)	21.7 per cent (686 hp)	34.3 per cent (810 kW)	-
Notch 4	25.0 per cent	**34.3 per cent (945 kW)**	39.9 per cent (735 hp)	32.7 per cent (1,034 hp)	46.0 per cent (1,086 kW)	33.0 per cent (1057 bhp)
Notch 5	39.1 per cent	**45.4 per cent (1253 kW)**	54.4 per cent (1,002 hp)	46.2 per cent (1,461 hp)	55.7 per cent (1,316 kW)	-
Notch 6	56.3 per cent	**66.0 per cent (1820 kW)**	68.8 per cent (1,268 hp)	62.4 per cent (1,971 hp)	67.2 per cent (1,589 kW)	59.1 per cent (1895 bhp)
Notch 7	76.6 per cent	**87.1 per cent (2400 kW)**	85.2 per cent (1,570 hp)	84.2 per cent (2,661 hp)	83.9 per cent (1,983 kW)	-
Notch 8	100 per cent	**100 per cent (2757 kW)**	100 per cent (1,843 hp)	100 per cent (3,159 hp)	100 per cent (2,363 kW)	100 per cent (3,206 bhp)

Table notes:

a Based upon the calculation method in Spiryagin et al. (2016) for notch power for diesel engine heavy haul operations - $P_n = (n^2/64) * P_{rated}$; Where P_n is the notch power; P_{rated} is the rated power in notch 8; and n is the discrete notch numbers, which takes a range from zero to eight.

Bold values represent adopted notch setting and operating mode percentages

Units: kW = kilowatts, hp = horsepower, bhp = brake horsepower

Spiryagin et al. (2016) provides a calculation method which follows a square-law relationship to estimate engine power at the eight engine notch settings. As an example, the Spiryagin et al. (2016) study uses engine power capabilities referenced from earlier work (Spiryagin et al. 2015) to estimate engine power. The Spiryagin et al. (2016) calculation method provides a procedure to estimate notch engine power in lieu of actual measured data. However, the calculated notch engine power is lower than all other referenced sources as shown Table 5.2.

Notch power ratings cited by Kim et al. (2017) are greater than all other sources, especially for idling which is 9.1 per cent of maximum rated power, 3.9 times higher than the next highest idling power usage. However, the Kim et al. (2017) study investigated locomotives specific to Korea, and in combination with the relative high-power rating locomotives assessed, the results of this study were not considered suitable for the calculation of duty cycle power ratings for the Project.

Power ratings presented by Therma-Dynamics Rail LLC (2014) were lower than most sources at almost all notch settings.

The notch engine power values from Spiryagin et al. (2015) are higher than all other sources at notch seven and comparable at all other notches. The notch power ratings presented were for a line haul diesel locomotive with a total maximum power of 2,757 kW, which is similar to the engine power of the locomotives proposed for the Project. Due to the similarity in locomotive engine power, notch settings from Spiryagin et al. (2015) were used in calculating duty cycle power ratings for the Project for train travel.

For the literature reviewed, engine idling power ranged from zero per cent (Spiryagin et al. 2015) to 9.1 per cent (Kim et al. 2017). Cassadei and Maggioni (2016) presented the second highest idling power usage at 2.3 per cent of maximum engine power which was considered appropriate for adoption for the assessment as it was based on engine testing of diesel locomotives.

Limited information was available from literature with respect to engine power during dynamic braking. From the information available, the higher engine power percentage of 3.6 per cent (StarCrest Consulting Group 2008) was adopted for duty cycle calculations.

Table 5.3 summarises the adopted notch setting, and operating mode percentages of maximum engine power used to calculate average duty cycle power ratings.

Table 5.3 Adopted notch setting and operating mode power rating percentages

Notch setting or operating mode	Adopted percentage of maximum engine power (per cent)	Source
Idle	2.3	Casadei & Maggioni (2016)
Dynamic Braking	3.6	StarCrest Consulting Group (2008)
Notch 1	4.8	Spiryagin et al. (2015)
Notch 2	10.7	
Notch 3	24.1	
Notch 4	34.3	
Notch 5	45.4	
Notch 6	66.0	
Notch 7	87.1	
Notch 8	100	

In terms of time spent at each engine notch setting or operating mode, no data was available at the time of assessment. As such, data from US rail operation was utilised to provide a basis for average duty cycle power ratings. Table 5.4 presents US EPA data from Ireson, Germer, and Schmid (2005), which represents duty cycle data for line haul and passenger diesel locomotives in the US.

Table 5.4 Duty-cycles for line haul and passenger locomotives in the US (percentage time in notch)

Notch setting/operating mode	Line haul (per cent)	Passenger (per cent)
Idle	38.0	47.4
Dynamic Braking	12.5	6.2
Notch 1	6.5	7.0
Notch 2	6.5	5.1
Notch 3	5.2	5.7
Notch 4	4.4	4.7
Notch 5	3.8	4.0
Notch 6	3.9	2.9
Notch 7	3.0	1.4
Notch 8	16.2	15.6

The line haul data represents analysis from 63 line-haul trains and 2,475 operational hours and the passenger train data from 20 passenger trains and 57,500 operational hours. As proposed rail traffic for Inland Rail program and the Project will be exclusively freight and coal trains, the line haul duty cycle percentages are considered most applicable.

Using the data presented in Table 5.1, Table 5.3 and Table 5.4, average hourly power consumption rates were calculated for idling and operating locomotives, with the calculated presented in Table 5.5.

Table 5.5 Locomotive power usage

Power	NR Class	SCT/LDP	Class 82	PR22L
Maximum power (kWh)	2,917	3,350	2,425	1,640
Calculated duty cycle (kWh)	766	880	637	431
Idle (kWh)	6	7	5	4

Table 5.6 presents the maximum travel speeds along the Project alignment. Class 82 trains speeds were not known at the time of the assessment and have been assumed to travel at the same speed as the laden PR22L locomotives. Average line speeds were estimated to be 75 per cent of the maximum line speeds along the alignment.

Table 5.6 Locomotive travel speeds

Power	Direction of travel	NR Class	SCT/LDP	Class 82	PR22L
Design line speed (km/h)	Eastbound	115	115	80	100
	Westbound	115	115	80	80
Average line speed (km/h)	Eastbound	86	86	60	75
	Westbound	86	86	60	60

Total engine power

The following equation represents the calculation method used to determine the total locomotive power per hour for the entire alignment.

$$P_{loco} = t_{loco} \times n_{loco} \times c_{loco}$$

Where:

- P_{loco} is the total calculated power per hour for the entire alignment for a specific locomotive type (kWh)
- t_{loco} is the average time taken for the locomotive to travel the alignment, derived from the average line speed of each locomotive type (km/h) and the alignment length (km)
- n_{loco} is the total number of locomotives of each train type per hour
- c_{loco} is the calculated average duty cycle power for each locomotive type (kWh).

Emission rates

Pollutant diesel combustion emission rates were then calculated using the following:

- For the typical scenario emissions have been calculated based on a total of 328 trains per week (approximately 47 trains per day) (refer Table 2.1)
- For the peak scenario emissions have been calculated based on a total of 402 trains per week (approximately 57 trains per day) (refer Table 2.1)
- Locomotive power usage has been adopted as presented in Table 5.5
- 75 per cent of journey time was assumed to consist of travel time, with and 25 per cent of journey time assumed to consist of trains being stationary and idling at crossing loops (based on operational rail modelling).

The following equation calculates the pollutant emissions from locomotive traffic along the entire Project alignment.

$$ER_{pollutant} = \frac{\left[\sum^{loco}(P_{loco} \times EF_{pollutant})\right]}{3600 \times d}$$

Where:

- $ER_{pollutant}$ is the calculated pollutant emission rate for NO_x, TSP, PM_{10}, $PM_{2.5}$, and total VOC's (grams per metre per second, g/m/s)
- P_{loco} is the total locomotive calculated power per hour for entire alignment (kWh)
- $EF_{pollutant}$ is the pollutant emission factor as per Table 5.1 (g/kWh)
- d is the rail track length of the Project alignment (m).

The following equation represents the calculation method to determine emissions from idling locomotives during normal assumed operation.

$$ER_{idle} = \left[\sum^{loco}\left(\frac{t_{loco}}{3} \times n_{loco} \times P_{loco}\right)\right] \times EF_{pollutant}$$

Where:

- ER_{idle} is the calculated pollutant emission rate for NO_x, TSP, PM_{10}, $PM_{2.5}$, and total VOC's (grams per second, g/s)
- t_{loco} is the locomotive travel time along the alignment without stopping. Idling time is assumed to be 25 per cent of the total travel time along the alignment, i.e. 1/3 of the non-stopping travel time of a locomotive to travel the alignment.
- n_{loco} is the total number of locomotives of each train type.
- P_{loco} is the total locomotive calculated power per hour for entire alignment from idling (kWh)
- $EF_{pollutant}$ is the pollutant emission factor as per Table 5.1 (g/kWh).

To determine continuous idling emissions from crossing loops, it was assumed that NR class locomotives would idle for periods up to or greater than 1 hour depending on the scenario modelled. As such, the idling emission rates were derived from the hourly idling locomotive power usage presented in Table 5.5, and the locomotive emission factors presented in Table 5.1.

The derived pollutant locomotive diesel emission rates are presented below in Table 5.7. The locomotive idling emissions rates are also presented, which are cumulative emissions from the three proposed crossing loops. The methodology for the assessment of emissions from the crossing loops is explained in Section 5.2.2.6

Table 5.7 Derived pollutant diesel combustion emission rates

Pollutant	Total G2H emissions (g/m/s)	Long term average idling emissions per crossing loop (g/s)[1]	Short term continuous idling emissions per crossing loop (g/s)[1]
NO_x	1.46×10^{-04}	0.134	4.944
TSP	5.78×10^{-05}	0.003	0.123
PM_{10}	3.27×10^{-05}	0.003	0.120
$PM_{2.5}$	1.12×10^{-05}	0.003	0.116
Total VOCs	2.06×10^{-05}	0.014	0.527

Table note:

1 Explanation of the scenarios modelled (long term and short term) for the assessment of emissions from the crossing loops is provided in Section 5.2.2.6.

Where emissions factors for specific pollutants of concern were not available, emission factors from the NPI Emissions estimation technique manual for Railway Yard Operations (NPI 2008) and the EMEP/EEA Air pollutant emission inventory guidebook 2016 (EMEP/EEA 2016a and 2016b) were used. The referenced and speciated locomotive emissions factors are presented in Table 5.8.

Table 5.8 Locomotive emission factors and speciation

Pollutant	Emission factor	Units	Speciation percentage (per cent)	Source
Total suspended particulates				
PM_{10}	3.53	kg/ kilolitres (kL)	97.6	(NPI 2008)
$PM_{2.5}$	3.39	kg/kL	93.7	(NPI 2008)
Cadmium	0.01	g/tonne (t) of fuel	0.0007	(EMEP/EEA 2016a)
Chromium	0.05	g/t of fuel	0.0033	(EMEP/EEA 2016a)
Copper	1.7	g/t of fuel	0.1118	(EMEP/EEA 2016a)
Nickel	0.07	g/t of fuel	0.0046	(EMEP/EEA 2016a)
Selenium	0.01	g/t of fuel	0.0007	(EMEP/EEA 2016a)
Zinc	0.03	g/t of fuel	0.0658	(EMEP/EEA 2016a)
Lead	0.0005	mg/kg of fuel	0.00003	(EMEP/EEA 2016b)
Arsenic	0.036	mg/kg of fuel	0.00001	(EMEP/EEA 2016b)
Total hydrocarbons				
Non-methane VOCs	4.65	kg/t of fuel	100	(EMEP/EEA 2016a)
Benzo(a)pyrene	0.03	g/t of fuel	0.0006	(EMEP/EEA 2016a)
Toluene	-	-	0.01	(EMEP/EEA 2016b)
m,p-xylenes	-	-	0.98	(EMEP/EEA 2016b)
o-xylenes	-	-	0.40	(EMEP/EEA 2016b)
Benzene	-	-	0.07	(EMEP/EEA 2016b)
Polychlorinated dioxins and furans (toxic equivalency)	8.35×10^{-11}	kg/kL	0.0000000020	(NPI 2008)

5.3.1.2 Fugitive coal dust

The nature of the emissions from the coal wagons (laden and unladen) is fugitive i.e. the emissions are not released through an easily quantifiable source, such as a vent or stack. The primary mechanism for coal dust lift-off from coal wagons is the movement of air over uncovered laden wagons; therefore, the surface area open to the wind plays a pivotal role in the amount of fugitive coal dust emitted.

Veneering is a best practice management measure for coal trains currently applied to coal wagons using the Bowen Basin coal rail lines and the West Moreton System rail corridor. It is expected that all coal trains operating on Inland Rail will utilise veneering to control coal dust emissions. However, this AQIA has also undertaken modelling of emissions from coal trains without the inclusion of veneering to investigate the potential for air quality impacts without this mitigation measure applied.

A detailed study into the surface wind speed across loaded wagons and their associated dust emissions has been carried out in Environmental Evaluation of Fugitive Coal Dust Emissions from Coal Trains (Connell Hatch 2008). The study also presents an equation to calculate the mass emission rate of coal dust from a moving laden wagon at a particular site, using the average wind speed at each modelling location, together with the train speed data for that site:

$$m = k_1 * v^2 + k_2 * v + k_3$$

Where:

- m is the mass emission rate of coal dust (as TSP) from the wagon surface in g/km/tonne of coal transported
- k_1 is a constant with a value of 0.0000378
- k_2 is a constant with a value of -0.000126
- k_3 is a constant with a value of 0.000063
- v is the air velocity over the surface of the train in km/h.

This veneer acts as a binding agent to reduce the amount of surface lift-off of particulates from the laden wagons. Environmental Evaluation of Fugitive Coal Dust Emissions from Coal Trains (Connell Hatch 2008) suggested that a reduction in surface lift-off of up to 85 per cent was achievable through its application. Trials completed by the BNSF Railway Company and Union Pacific (UP) Railroad Company investigated the effectiveness of coal dust suppressants in the Powder River Basin in the US. The trials looked at seven different chemical agents in suppressing coal dust emissions from 1,633 loaded trains. The trials found the following: *"… coal dust reductions ranged from 75 per cent to 93 per cent depending on the topical treatment used in the test"* (BNSF & UP 2010). Therefore, a conservative assumption of 75 per cent reduction in the coal dust emission rates has been taken into account in this study for the laden coal trains with the inclusion of veneering.

DES (when formerly operating as DSITI) has previously undertaken air quality monitoring to investigate coal dust emissions from the Western Metropolitan Rail System, with reports published in 2013 (DSITI 2013b) and 2016 (DSITI 2016b). The Queensland Resources Council engaged the then DSITI to conduct a dust monitoring program, with a focus on coal dust, along the Western Metropolitan Rail System on behalf of the users and operators of the network. The monitoring was undertaken in two phases; Phase 1 (from March to June 2013) (reported in 2013) and Phase 2 (from February 2014 and ongoing) (reported in 2016). The purpose of the monitoring was to assess background particulate levels along the rail corridor and to assess the effectiveness of the fully implemented South West Supply Chain Coal Dust Management Plan, which includes veneering.

The 2016 DSITI report concluded that the implementation of the South West Supply Chain Coal Dust Management Plan had been "*highly effective in reducing the loss of coal dust from loaded rail wagons during transport*". However, the DSITIA reports do not nominate an emission reduction rate (reduction percentage) for veneering to coal wagons which can be used in dispersion modelling and therefore the findings for emission reduction from the Connell Hatch (2008) evaluation have been used for dispersion modelling.

The 2013 and 2016 DSITI reports note that emissions from coal haulage trains represent a minor contribution to overall ambient particulate concentrations, with regional particulate emission sources determined to have greater impact on the ambient particulate levels measured. Due to the minor contribution attributed to coal train emissions, the adopted coal train emission rates used in this assessment have not been validated against the DSITI monitoring data from the Western Metropolitan Rail System.

Environmental Evaluation of Fugitive Coal Dust Emissions from Coal Trains (Connell Hatch 2008) also detailed that following unloading of the coal at the port or terminals, a small amount of residual coal typically remained in the wagon (approximately 0.13 tonnes (t) per wagon), which was transported back to the mine/s. In addition, parasitic loads were found to be located on the wagon sills, shear plates and bogies, which resulted in further fugitive emissions.

Although wagon washing is undertaken at some coal handling facilities (such as at the Jondaryan Load Out Facility, west of the Project), wagon washing is not undertaken at the Port of Brisbane and therefore it is expected that residual coal will remain in the wagons following unloading at the port. Therefore, an additional 0.13 t of coal per wagon was added to the proposed coal train payload of 85.9 t per wagon when developing the modelled particulate emission rates to account for residual coal in the wagons on return trips.

Coal dust emission rates for the rail were calculated utilising the following input parameters:

- A travel speed of 80 km/h for a laden coal train travelling along the Project alignment (maximum coal train speed for alignment). The travel speed was used as the wind speed when calculating the mass emission rate of coal dust
- Veneering mitigation factor of 75 per cent (e.g. reduction in emissions of 75 per cent)
- An average coal payload per train of 5,592 tonnes (inclusive of 0.13 tonnes residual coal per wagon)
- A conversion factor of 0.5 from TSP to PM_{10} (US EPA 1998)
- A conversion factor of 0.15 from PM_{10} to $PM_{2.5}$ (US EPA 1998) based on the particle size distributions for mechanically generated emissions from aggregate and unprocessed ores published in the US EPA Compilation of Air Pollutant Emission Factors (US EPA 1998). Particle size distribution data is not provided for coal, but size distributions for aggregate and unprocessed ores (15 per cent for $PM_{2.5}$) is considered acceptable in lieu of specific data for coal.

Modelling of coal dust emissions assumes that all coal trains travel at speed (80 km/h) along the alignment, and do not slow down to access the crossing loops. Fugitive emissions of coal dust from trains at the crossing loops has not been modelled specifically. However, at lower wind speeds across the coal wagons, emissions are estimated to be considerably lower than the modelled travel speed of 80 km/h. For example, fugitive emissions from a stationary coal train with an average 10 km/h cross wind, the fugitive coal dust emissions represent 1.1 per cent of emissions from a coal train travelling at 80 km/h. Coupled with the assumption that the coal trains travel at 80 km/h for the entire Project alignment results in an conservative estimate of coal dust emissions, which is expected to adequately represent fugitive coal dust emissions from the crossing loops proposed for the Project.

Table 5.9 Derived coal dust emission rates

Pollutant[a]	Uncontrolled coal dust emissions (g/m/s) per train	Controlled coal dust emissions (g/m/s) per train	Total Project alignment-controlled coal dust emissions (g/m/s)
TSP	2.14×10^{-6}	5.36×10^{-7}	4.99×10^{-05}
PM_{10}	1.07×10^{-6}	2.68×10^{-7}	2.49×10^{-05}
$PM_{2.5}$	1.61×10^{-7}	4.02×10^{-8}	3.74×10^{-06}

Table note:

a PM_{10} has been assumed to represent 50 per cent of TSP emissions, with $PM_{2.5}$ assumed to represent 15 per cent of PM10 emissions.

5.3.1.3 Fugitive dust from freight and livestock trains

Grain and cotton freight are containerised and the freight of enclosed containers is considered to have minimal potential for fugitive dust emissions.

There is potential for emissions from livestock freight trains due to earth and soil being transported into the wagons by cattle. However, it is expected that this material would be removed from the wagons early during train travel and would not be transported along the Project alignment. The forecast volume of livestock trains (six trains per week for peak volumes in 2040, see Table 2.1) is also low and overall fugitive dust emissions from livestock trains are not considered a significant source which require modelling.

Fugitive dust emissions from freight and livestock trains have therefore not been assessed in any further detail.

5.3.1.4 Toowoomba Range tunnel portal emissions

The ventilation system for the Toowoomba Range tunnel has been designed such that locomotive emissions which occur within the tunnel are exhausted via the tunnel portals rather than via the intermediate ventilation shaft. The intermediate ventilation shaft and above ground purging systems and equipment (presented in Figure 2.1) is used to deliver fresh air from the surface to the tunnel below at an intermediate point, with this intake air purging the tunnel (and the train emissions) outward from the tunnel in each direction to the portals.

There are three doors proposed for the tunnel (east portal door, west portal door and intermediate door) which may open and close at differing points during a trains transit through the tunnel. For trains travelling uphill (westbound), the portal doors at the western tunnel portal are designed to be closed prior to entry. This allows the train and tunnels to be ventilated by airflow induced by the piston action of moving trains into the tunnel. Once the train travels past the intermediate ventilation shaft, the western portal door opens and the intermediate door closes. Fresh air then flushes the tunnel airspace from the intermediate ventilation shaft outwards to each of the portal doors. Effectively, this splits the uphill locomotive emissions between the two tunnel portals. It has been assumed for the assessment, that the tunnel is purged after each train travelling the tunnel and that no air pollutants accumulate within the tunnel airspace.

Emissions from the Toowoomba Range tunnel portals were calculated utilising specific parameters relevant to the tunnel, and are summarised as follows:

- Total tunnel length of 6,350 m (including ventilation buildings at each portal)
- Intermediate ventilation shaft located 2,700 m from the western tunnel portal
- Portal door of 60 m^2 at each end
- Emissions from trains within the tunnel have been calculated following the methodology described in Sections 5.3.1.1 and 5.3.1.2 for locomotives and fugitive coal dust. Emissions have been calculated for travel in each direction, considering the travel speed and duration uphill (westbound) and downhill (eastbound)
- Fugitive coal dust emissions have been calculated for coal trains travelling only in the eastbound direction, as coal trains will not be laden with coal when they are travelling westbound.

A key aspect of pollutant dispersion from tunnels is the portal area, as this influences the volume of air leaving the tunnel. As there are portal doors at each end of the Toowoomba Range tunnel, the area with the tunnel doors open (60 m^2) has been used in the assessment.

Table 5.10 presents the average train speeds for each group of expected locomotive type, which is a result of the locomotive number and type per train, weight of trailing wagons, and gradient of the tunnel rail track. A weighted average was calculated based on the percentage of rail traffic expected to travel through the tunnel. Also, the average speeds are broken into “stopping” and “non-stopping” speeds, based on operational modelling of rail traffic travelling directly through the tunnel without stopping and for stopping at the crossing loops at each end of the tunnel.

Table 5.10 Toowoomba Range tunnel average locomotive speeds (km/h)

Train type	Non-stopping		Stopping	
	Eastbound	Westbound	Eastbound	Westbound
Superfreighter	55.0	25.5	50.7	25.0
Express	55.0	32.7	51.2	32.3
Coal	53.7	45.0	52.1	44.2
Agriculture-Steel-Containers	55.0	50.2	53.9	48.5
Weighted Average	**54.4**	**41.9**	**52.3**	**40.9**

Table note:

The weighted average speed has been calculated by multiplying the speed for each train by the ratio of that train type over the total number of trains travelling in that direction. For example, for non-stopping eastbound travel there are a total of 402 trains, comprised of: 80 Superfreighter trains (ratio of 0.19); 28 Express trains (ratio of 0.07); 196 Coal trains (ratio of 0.47); and 114 Agriculture trains (ratio of 0.27). The formula is therefore 55.0 km/h x 0.20 + 55.0 km/h x 0.07 + 53.7 km/h x 0.47 + 55.0 km/h x 0.27 = 54.4 km/h.

The power required per train for the modelling of tunnel travel in each direction for each train type is presented in Table 5.11. The power required has been calculated using maximum rated locomotive power (as specified by ARTC) for each train travelling in the westbound direction (uphill) and 10 per cent of the maximum power is required for each train travelling in the eastbound direction (downhill). This 10 per cent power rating estimate was used to represent the downhill idling and dynamic braking emissions of the trains for the design of tunnel ventilation systems and the AQIA.

Table 5.11 Toowoomba Range tunnel power (kW) per train

Train type	Eastbound	Westbound
Superfreighter	670	6,700
Express	875	8,751
Coal	492	4,920
Agriculture-Steel-Containers	728	7,275

Table 5.12 summarises the tunnel portal emissions used in the dispersion modelling, which include the cumulative sources of locomotive diesel combustion emissions and fugitive dust emissions from coal train wagons (calculated as per Section 5.2.1.2).

As the train power required has been assumed to be constant based on direction of travel (refer Table 5.11), tunnel portal emissions have been calculated using the “stopping” speeds presented in Table 5.10. The “stopping” speeds are lower than the “non-stopping” speeds, and therefore adopting the lower travel speeds results in a longer travel duration and higher emissions within the tunnel.

The intermediate ventilation shaft of the tunnel is located approximately 2,700m from the western tunnel portal, and 3,650 m from the eastern tunnel portal. Emissions from the tunnel portals have been calculated assuming that emissions from train travel between the western tunnel portal and the intermediate ventilation shaft will be emitted via the western tunnel portal, and emissions from train travel between the intermediate ventilation shaft and the eastern tunnel portal will be emitted via the eastern tunnel portal. Locomotive emissions which occur within the tunnel will not be emitted from the intermediate ventilation shaft.

Emissions from the tunnel portals have been modelled as occurring continuously based on the weekly train volumes for the peak and typical volume scenarios assessed.

Table 5.12 Derived Toowoomba Range tunnel portal emissions

Pollutant	Western tunnel portal emission rate (g/s)	Eastern tunnel portal emission rate (g/s)
NO_x	1.17	1.58
TSP	0.10	0.14
PM_{10}	0.08	0.11
$PM_{2.5}$	0.06	0.09
Total VOCs	0.16	0.22

Table note:

Tunnel portal emissions have been calculated using the “stopping” speeds presented in Table 5.10. The “stopping” speeds are lower than the “non-stopping” speeds, and as the train power required has been assumed to be constant based on direction of travel (refer Table 5.11), adopting the lower travel speeds results in a longer travel duration and higher emission rates.

5.3.1.5 Adjoining Inland Rail projects

To assess the cumulative impact of the Inland Rail Program, the adjoining sections of the Inland Rail Program adjacent to the Project, namely the B2G and H2C sections, have been included in the dispersion modelling undertaken for the assessment of operational phase impacts.

One kilometre of the H2C project rail section has been modelled at the eastern end of the Project alignment, with one kilometre of the B2G project modelled at the western end. The emission rates used for the modelling of these sections were calculated based on the rail traffic forecast for these projects for 2040. For H2C, the volume of trains for 1 km section of rail line modelled is the same as for the Project. For B2G, traffic volumes are lower due to the loss of trains which travel along the West Moreton System rail corridor.

5.3.1.6 Existing QR network rail traffic

West Moreton System

The Project is co-located with the Western Line and the Main Line of the West Moreton System rail corridor. At the western end of the Project alignment, the Project alignment is co-located with the Western Line for 4.8 km. At the eastern end of the Project alignment, the Project alignment is co-located with the Main line for 800 m.

Due to the travel efficiency presented by the Project alignment, all future train traffic travelling between Gowrie and Helidon will use the Project alignment, rather than the existing West Moreton System. This assumption has been incorporated into the modelling for the AQIA.

There are a number of train services which will access or exit the Project alignment via the Western Line of the West Moreton System, rather than the Inland Rail Border to Gowrie project alignment. These train services include coal trains, livestock trains and container transport trains. To consider the potential impact of emissions from trains travelling along the Western Line prior to joining the Project alignment, emissions have been modelled from the 1 km section of the Western Line closest to the connection to the Project alignment.

West Moreton System Gowrie to Toowoomba

The Project alignment also includes a turnout to join to the Western Line connecting into Toowoomba. This spur will allow the Westlander passenger trains to travel into and out of Toowoomba using the Project alignment to travel through the Toowoomba Range.

Presently, the Westlander passenger train travels in and out of Toowoomba via two separate sections of the West Moreton System (Western Line north-west of Toowoomba, and Main Line north-east of Toowoomba) which bypass the Toowoomba Range. Existing Westlander train volumes consist of four trains per week (two eastbound and two westbound).

Due to the efficiency presented it is assumed that when the Inland Rail Program is operational, the Westlander will use the Project to travel through the Toowoomba Range, instead of bypassing it using the existing West Moreton System. For travel into Toowoomba from Brisbane, this will result in the Westlander travelling west through the Toowoomba Range tunnel and then turning east (using the spur provided by the Project) onto the existing West Moreton System Western Line which runs into Toowoomba. For travel out of Toowoomba, the Westlander will again use the Project, connecting using the Western Line.

The operation of the Inland Rail Program will increase Westlander train travel on the section of the Western Line between the Project (from the turnout) and Toowoomba from four trains per week to eight trains per week.

However, four additional train movements per week is not significant and emissions from eight trains per week do not present a risk for exceedance of the adopted air quality goals. On this basis, emissions from Westlander trains between the Project alignment and Toowoomba have not been assessed.

The Project's turnout to join the Western Line east of Gowrie would also allow for trains to access Toowoomba (including the Aurizon Willowburn rail facility) and connect to the South West System (which travels between Toowoomba to Thallon). However, these train movements are not confirmed and are likely to be significantly lower to the current train movements on the Western Line (due to the Project) and as such trains movements along the Western Line into and out of Toowoomba have not been assessed.

5.3.1.7 Toowoomba Bypass

The Toowoomba Bypass is a 41 km stretch of highway travelling from Helidon Spa at its eastern end to Athol at its western end. The Toowoomba Bypass consists of the Warrego Highway (A2) from the Warrego east interchange (Helidon Spa) to the Warrego west interchange (Charlton), and the Gore Highway (A39) from the Warrego west interchange (Charlton) to the Gore Highway interchange (Athol). The Toowoomba Bypass was officially opened to traffic in September 2019.

The span of the Toowoomba Bypass east to west is longer than the Project, and the Toowoomba Bypass intersects the Project at a number of locations, most notably for air quality near the western tunnel portal of the Toowoomba Range tunnel. The Project also runs parallel and in close proximity to the Toowoomba Bypass for approximately 15 km in the Lockyer Valley.

Pollutant species emitted from road traffic on the Toowoomba Bypass include NO_x, PM_{10} and $PM_{2.5}$, which are pollutants of concern for the Project. The purpose of the bypass is to provide an alternative route for heavy vehicle transport trucks, and therefore the bypass is anticipated to support a higher than typical proportion of heavy vehicles which generate more emissions than a standard light passenger vehicle.

Due to the location of the Toowoomba Bypass in relation to the Project, emissions from road traffic using the bypass have been modelled in the assessment to allow for cumulative assessment of impacts during the operational phase.

The following methodology has been used in the assessment of emissions from the bypass:

- Forecast traffic volumes for the Toowoomba Bypass were obtained from the Project traffic team for the year 2020. The forecast Annual Average Daily Traffic (AADT) volume for 2020 was estimated to be 2,976 vehicles.
- The AADT for the year of assessment (2040) was calculated using an annual growth rate of 2 per cent, which is the growth rate adopted by the Project traffic team. Using the forecast traffic volumes for 2020, the estimated 2040 AADT volume for the Toowoomba Bypass was 4,336 vehicles.
- DTMR road vehicle emission factors have been adopted for the assessment. The following assumptions were included as inputs to calculate the emission factors using the DTMR spreadsheet:
  - Travel speed: 100 km/h
  - Seasonal correction: winter (worst-case for emissions)
  - Heavy vehicle percentage: 46 per cent (as per traffic data provided)
  - Road gradient: 6.5 per cent (maximum gradient).
- For assessment against short term air quality goals (1 hour, 24 hour, etc), modelling of road traffic emissions has been undertaken by the highest hourly emissions (peak hour) for every hour of the day.
- For assessment against annual average air quality goals, modelling has been undertaken using the emission rate based on the average hourly traffic volume (e.g. AADT/24 hours).

The length of the Toowoomba Bypass which has been modelled is the section between O'Mara Road (Gore Highway overpass) at the western end to Helidon Spa (where the bypass reconnects with the existing Warrego Highway) at the eastern end. The input source parameters for the bypass are included in Table 5.17.

The methodology adopted for modelling emissions from the Toowoomba Bypass is conservative, and is likely to over-estimate emissions from traffic on this road link.

5.3.2 Modelling methodology

The air dispersion modelling conducted for this assessment was based on a modelling approach using The Air Pollution Model (TAPM) as a meteorological pre-processor to the air dispersion models CALPUFF and GRAL. The CALPUFF model was used primarily for the modelling assessment; however, for assessment of pollutant impacts from the Toowoomba Range tunnel portal sources the GRAL model was utilised.

The data that was available for this Project and a discussion of the data processing methodologies that were required in order to implement both CALPUFF and GRAL are discussed in the following sections. The models are briefly described in the following sections with further details provided in Appendix C. The modelling was undertaken in accordance with relevant guidance documents and appropriate literature (NSW EPA 2016; Barclay & Scire 2011).

Figure 5.1 presents an overview of the modelling methodology which has been used for the assessment of operational phase impacts.

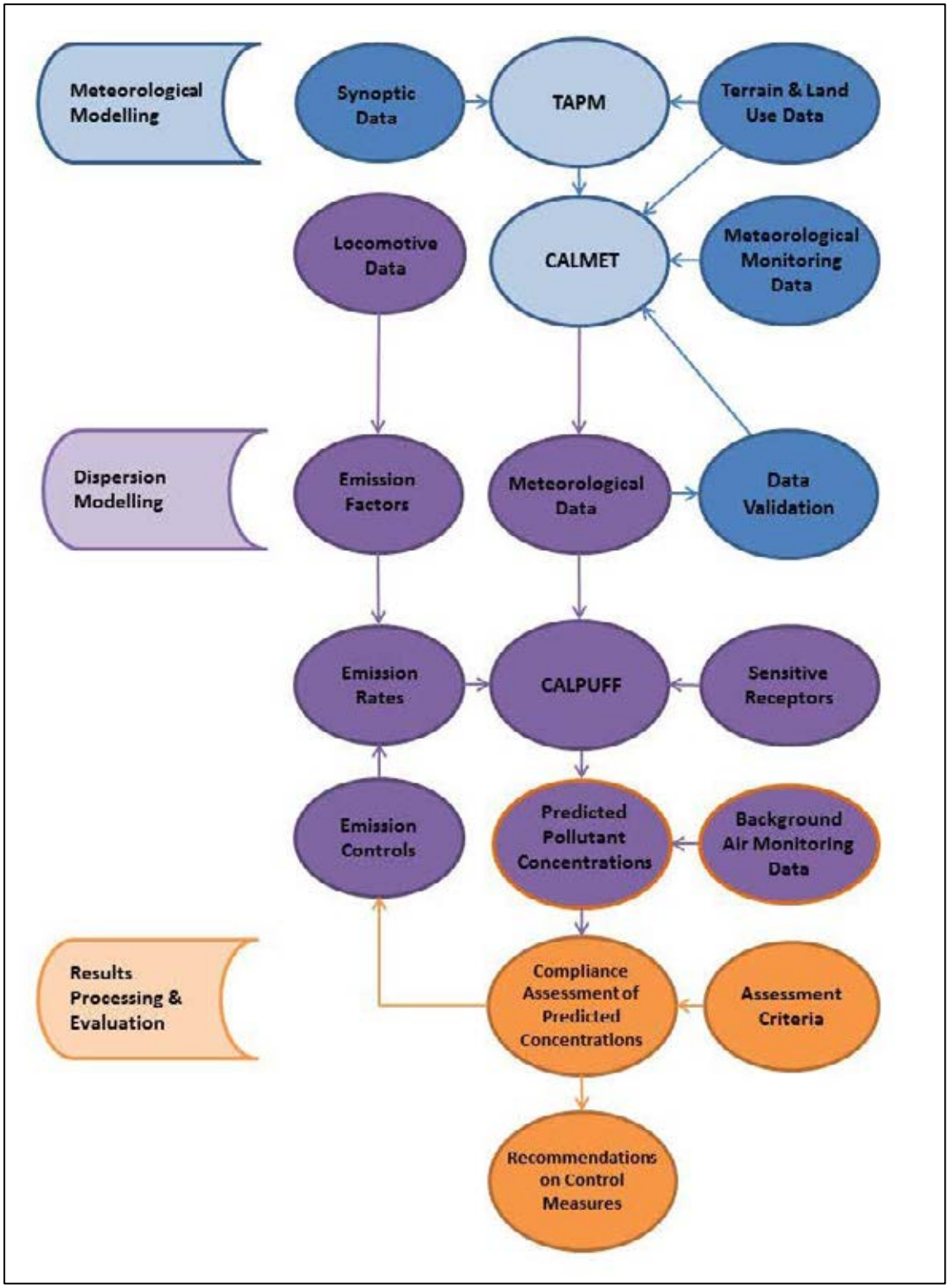

Figure 5.1 **Diagrammatic representation of the CALPUFF modelling methodology**

5.3.2.1 Selection of meteorological year

For Australia, the ENSO has the strongest effect on year to year climate variability in Australia, mostly affecting rainfall and temperature. El Niño incidences represent periods of unusually warm Pacific Ocean conditions along the western coast of South America, which frequently presents as high rainfall events in South America and drought conditions for Australia. Conversely, La Niña periods represent cooler ocean surface temperatures along the western coast of South America and increase the likelihood of drought conditions locally and high rainfall periods in Australia.

The Southern Oscillation Index (SOI), Oceanic Niño Index (ONI), and Multivariate ENSO Index (MEI) are measures that can indicate episodes of El Niño and La Niña. Due to differences in methodology each of these aforementioned indices can have slightly differing results. However, utilising the SOI, ONI, and MEI measures for ENSO, agreeance can be seen on which years represent periods of El Niño or La Niña. The three indices show that the year 2013 was relatively neutral in terms of ENSO. The year 2013 represents an ideal candidate for selection of meteorological period that is relatively unaffected by variances in weather due to ENSO and therefore data from this year has been used for the assessment.

Further discussion regarding the selection of the meteorological year is provided in Appendix A.

5.3.2.2 Consideration of climate change influence on meteorological modelling data

The meteorological modelling undertaken for the AQIA study area has been undertaken using prognostic meteorological data generated by TAPM and observational data from BoM stations for the year 2013. The purpose of meteorological modelling is to develop meteorological input for dispersion modelling which is representative of typical meteorological conditions for the AQIA study area based on long term historical meteorological data. Changing climatic conditions due to climate change has the potential to influence wind conditions, atmospheric stability, mixing height and other meteorological factors important to the dispersion of ground-released pollution. However, as described in NSW EPA Approved methods for the modelling and assessment of air pollutants in New South Wales (NSW EPA 2016) (a guidance document referred to for air quality modelling in the EP Act Air Guideline and applicable for assessments in QLD), site-representative meteorological data is to be used and meteorological modelling outputs validated against long term historical meteorological data (presented in Section 4.2.2). Therefore, the potential influence of future changing climatic conditions due to climate change has not been considered in this assessment.

5.3.2.3 TAPM and meteorological data

The meteorological data used in the dispersion model are of fundamental importance, as these data drive the predictions of the transport and dispersion of the air pollutants in the atmosphere. The most critical parameters are:

- Wind direction, which determines the initial direction of transport of pollutants from their sources
- Wind speed, which dilutes the plume in the direction of transport and determines the travel time from source to receiver
- Atmospheric turbulence, which indicates the dispersive ability of the atmosphere.

Meteorological data from three BoM stations relevant to the Project in addition to prognostic meteorological data generated by TAPM has been used in the assessment. Pseudo upper air stations were generated from TAPM model runs for the AQIA study area. The use of pseudo upper air stations allows the CALMET model to be driven primarily by surface observations whilst providing the required upper air meteorology data.

A total of four pseudo upper air (UA) stations were generated from TAPM, with individual runs undertaken for each station. The model setup for TAPM for each of the runs undertaken is presented in Table 5.13. The pseudo UA stations locations were located in areas of mostly flat terrain and uniform land use types.

Table 5.13 TAPM input parameters

Parameter	Input
TAPM Version	4.0.4
Number of grids (spacing)	5 (30 km, 10 km, 3 km, 1 km, 0.3 km)
Number of grid points	41
Number of vertical levels	25
Terrain height database	9 second DEM
Year of analysis	January to December 2013
Grid centre point	See Table 5.14 for UA1, UA2, UA3 and UA4.

Meteorological data was sourced from the UQ Gatton, Oakey Aero and Toowoomba Airport BoM stations. A summary of the meteorological stations considered, including the prognostic stations, is presented in Table 5.13.

Further information regarding meteorological data is presented in Appendix A.

Table 5.14 Meteorological stations included in modelling

Station	Coordinates (GDA zone 56)	Variables	Source
UQ Gatton	434,567 m E; 6,953,179 m S	Wind direction; wind speed; temperature; rainfall; pressure; relative humidity	BoM
Toowoomba Airport	393,126 m E; 6,952,754 m S	Wind direction; wind speed; temperature; rainfall; pressure; relative humidity	
Oakey Aero	375,561 m E; 6,968,254 m S	Wind direction; wind speed; temperature; rainfall; pressure; relative humidity	
UA1	379,852 m E; 6,952,368 m S	Upper air	TAPM
UA2	390,894 m E; 6,963,208 m S	Upper air	
UA3	394,946 m E; 6,949,227 m S	Upper air	
UA4	410,294 m E; 6,955,458 m S	Upper air	

Table note:

The coordinates presented in Table 5.13 are in the coordinate system as required by TAPM.

5.3.2.4 CALPUFF

The CALPUFF suite of programs, including meteorological (CALMET), dispersion (CALPUFF) and post processing modules (CALPOST), is an advanced non-steady state modelling system designed for meteorological and air quality modelling. DES does not require the use of any particular dispersion model (e.g. CALPUFF or AERMOD models); however, within the EP Act Air Guideline reference is made to the NSW EPA Approved methods and guidance for the modelling and assessment of air pollutants in New South Wales (NSW EPA 2016), which recommends CALPUFF. CALPUFF is appropriate in applications involving complex terrain, non-steady-state conditions, in areas where coastal effects may occur, and/or when there are high frequencies of stable or calm meteorological conditions (Barclay & Scire, 2011). As many of these features are present in the AQIA study area, the CALPUFF model is preferred over the more commonly used Gaussian models of AERMOD or AUSPLUME, which perform poorly in the aforementioned conditions.

5.3.2.5 GRAL

In order to investigate the air quality impacts from the railway tunnel portal emissions the GRAL dispersion model has been utilised. GRAL is a Lagrangian Particle model developed at the Institute for Internal Combustion Engines and Thermodynamics, Technical University Graz, Austria specifically to assess the dispersion of pollutants from roadways and tunnel portals (Oettl et al. 2002; Oettl et al. 2003; Oettl et al. 2005). GRAL has been extensively evaluated against experimental data from five different tunnel portals both in flat and complex terrain, with high and low traffic volumes, namely the Enrei, Hitachi and Ninomiya tunnels in Japan (Oettl et al. 2003), and the Kaisermuehlen (Oettl et al. 2005 and Enrentalerberg tunnels in Austria (Oettl et al. 2002). The GRAL model was specifically used to assess emissions from the Toowoomba Range tunnel portals.

The results from the GRAL modelling have been combined with the results from the CALPUFF modelling to determine the total concentrations at modelled receptors.

5.3.2.6 Modelling domains

Due to the size of the AQIA study area, several modelling domains were utilised as part of the assessment. Figure 5.2 presents the meteorological domains for CALMET and GRAMM, as well as the four CALPUFF domains and the single GRAL domain.

5.3.2.7 Crossing loops

Locomotive diesel emissions from crossing loops have been modelled based on the following:

- Locomotives have been modelled at each end of each crossing loop as three-point sources, resulting in six emission source points per loop. This modelling is conservative as it assumes locomotives are idling at each end of the crossing loop simultaneously.
- Emissions have been modelled from locomotives idling on the crossing loops only. Travel around the crossing loops has not been modelled as emissions during this short length of travel are not considered significant due to the brief transit time and as this travel is considered to be modelled by the travel of trains along the Project alignment, which is adjacent to the loops. Overall, the assessment of the loops is considered conservative due to the assumption of idling locomotives at each end.
- Two different approaches (hereafter referred to as versions) have been assessed for crossing loops to accurately consider emissions and allow for assessment against both short and long term averaging periods:
  - Short term (assessment against 1 hour, 24 hour and monthly dust deposition air quality goals): continuous idling of NR Class locomotives every hour throughout the year
  - Long term (assessment against annual average air quality goals): idling assumed to occur 25 per cent of the travel time, e.g. 15 minutes per hour or 6 hours per day.
- For both the short and long term versions, emissions from the six-point sources have been modelled conservatively assuming the locomotives to be NR Class locomotives, which have the highest emission rates of all the locomotives considered (refer Table 5.1).
- The locomotive point sources have been located on the top and in the centre of “buildings” included in the model to account for the influence of downwash caused by the structure of the locomotives.

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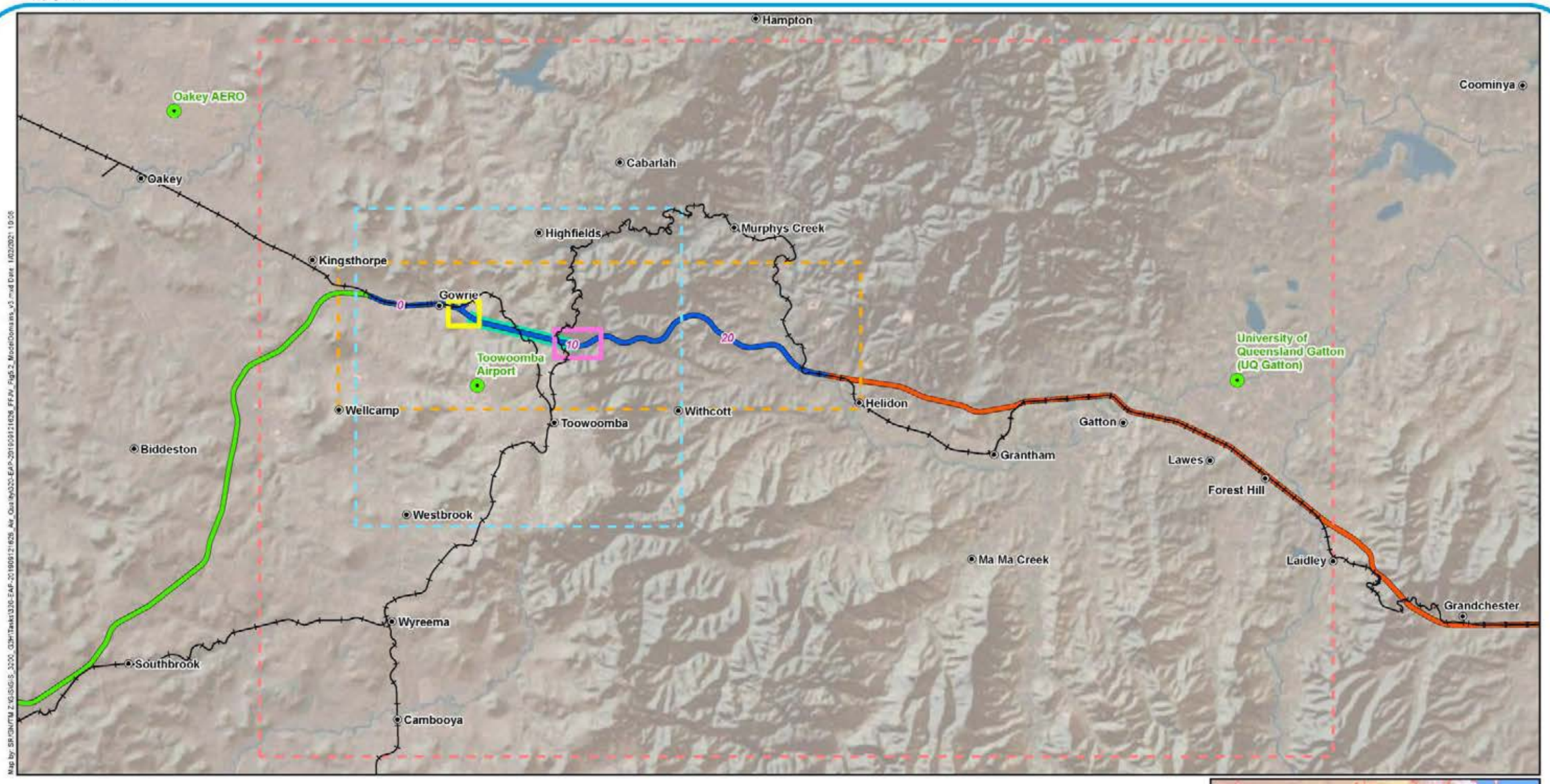

Legend

- BoM monitoring station
- 5 Chainage (km)
- Localities
- B2G project alignment
- G2H project alignment
- H2C project alignment
- Existing rail
- Tunnel
- CALMET domain
- CALPUFF domain
- GRAMM domain
- GRAL domain Western Tunnel Portal
- GRAL domain Eastern Tunnel Portal



A3 scale: 1:230,000

0 2 4 6 8 10km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 1/02/2021 Version: 3
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 5.2:
Locations of meteorological stations used and model domains

As discussed in Section 5.2.1.2, fugitive emissions of coal dust from trains stopped at the crossing loops has not been modelled specifically as emissions from the wagons at the crossing loops will be much lower than emissions from the wagons during train travel due to the reduced wind speed over the wagons while stationary. Using the emission formula presented in Section 5.2.1.2, and assuming a loaded coal train was stationary on a crossing loop for one hour with an average wind speed of 10 km/h, it is estimated that TSP emissions from the stationary train would be equivalent to approximately 5 per cent of the TSP emissions generated from a train travelling along the length of the Project alignment adjacent the crossing loop (approximately 2.2 km). This not considered to be a significant omission considering the conservative assumptions included in the assessment.

Fugitive odour from agricultural freight trains stopped at the crossing loops has been assessed qualitatively. The methodology for the qualitative assessment of fugitive odour is described in Section 5.4.

5.3.2.8 Modelling scenarios

Peak and typical train volumes have been considered in the assessment. In addition to the two train volume scenarios, two different versions of each scenario (short term and long term) have been run to enable accurate assessment of emissions from the crossing loops against both short term and long term air quality goals (refer Section 3.6). The modelled scenarios and crossing loop versions assessed are summarised in Table 5.14.

The model predictions from the short term version have been used to assess compliance against the short term air quality goals (1 hour, 24 hour, etc), with the model predictions from the long term version used to assess compliance against annual average air quality goals.

Modelling of emissions from train travel along the Project is consistent for all scenarios and crossing loop versions, the only exception being differing emission rates due to the change in train volumes between the peak and typical scenarios.

Table 5.15 Dispersion modelling scenarios

Scenario	Crossing loop version	Crossing loop idling description	Air quality goal averaging periods assessed
Peak train volumes 2040	Short term	Continuous idling emissions from crossing loops	30 minute, 1 hour, 24 hour and monthly dust deposition
	Long term	Idling at loops assumed to occur 25 per cent of the travel time	Annual
Typical train volumes 2040	Short term	Continuous idling emissions from crossing loops	30 minute, 1 hour, 24 hour and monthly dust deposition
	Long term	Idling at loops assumed to occur 25 per cent of the travel time	Annual

5.3.2.9 Model input parameters

A summary of the data and parameters used as inputs for dispersion modelling are shown in Table 5.15. The inputs have been presented in the same format as required by the software used.

Table 5.16 Model input parameters

Parameter	Input[1.]
TAPM (v4.0.4)	
Horizontal resolution	41 x 41 grid points; outer grid spacing 30,000 m x 30,000 m with an inner grid spacing of 1,000 m.
Grid centre coordinates	379,875 m E; 6,952,054 m S (UA1) 391,297 mE; 6,963,240 m S (UA2) 388,711 m E; 6,938,422 m S (UA3) 410,300 m E; 6,955,085 m S (UA4)

Parameter	Input[1.]
Vertical levels	25
Land use data	Default TAPM database
Simulation length	1 January – 31 December 2013
CALMET (v6.42)	
Meteorological grid domain	60 km x 40 km
Meteorological grid resolution	200 m resolution (300 x 200 grid cells)
Reference grid coordinate (south-west corner)	380,220 m E, 6,932,552 m S
Cell face heights in vertical grid	0, 20, 40, 80, 160, 320, 640, 1200, 2000, 3000 and 4000 m
Simulation length	1 January – 31 December 2013
Surface meteorological stations	CALMET Obs Mode: Run using surface observation data and pseudo upper air stations. ■ UQ Gatton (BoM) ■ Toowoomba Airport (BoM) ■ Oakey Aero (BoM)
Upper air meteorological stations	TAPM data derived Upper Air Stations: ■ UA1 ■ UA2 ■ UA3 ■ UA4
Terrain data	SRTM Version 3.0 Global meshed with project design DEM (1 arc second)
Land use data	ABARES (2016)
TERRAD (Terrain radius of influence)	8.0 km
R1 (Distance from an observational station at which the observation and first guess field are equally weighted) – Surface RMAX1 (Radius of influence of meteorological stations: Surface)	3.0 km 4.0 km
R2 (Distance from an observational station at which the observation and first guess field are equally weighted) - Upper air RMAX2 (Radius of influence of meteorological stations: Upper)	3.0 km 4.0 km
IEXTRP (Vertical extrapolation of surface wind observation)	-4 (extrapolate using similarity theory, exclude upper air observations from layer 1)
BIAS (Relative weight of extrapolated observations versus upper air soundings in the computation of the initial guess field)	-1.0, -1.0, -1.0, -1.0, -1.0, -1.0, -0.5, 0.5, 1.0, 1.0
CALPUFF (v7.2.1)	
Computational grid	146 x 41 cells (29.2 x 8.2 km)
Number of sensitive receptors	2,829
Dispersion option	Dispersion coefficient. use turbulence computed from micrometeorology
Dispersion modelling period	1 January 2013 – 31 December 2013
GRAMM (v17.1)	
Meteorology	
Meteorology station	CALMET Output at western tunnel portal
Period of meteorology	1 January – 31 December 2013
Meteorology parameters	Wind speed (m/s), wind direction, stability class

Parameter	Input[1]
Number of wind speed classes	8
Wind speed classes (m/s)	0-0.5, 0.5-1.0, 1.0-2.0, 2.0-3.0, 3.0-4.0, 4.0-6.0, 6-9.0, >9.0
Number of wind speed sectors	36
Sector size (degrees)	10
Anemometer height above ground (m)	10
Number of classified wind conditions	792
Meteorological grids and general GRAMM input	
GRAMM domain in UTM	385,600 m W; 403,800 m E; 6,963,200 m N; 6,945,400 m S
Horizontal grid resolution	200 m
Vertical thickness of the first layer	10 m
Number of vertical layers	15
Vertical stretching factor	1.40
Relative top-level height	3,874 m
Maximum time step	10 s
Modelling time	3,600 s
Relaxation velocity	0.20
Relaxation scalars	0.20
GRAL (v18.1)	
General	
GRAL domain in UTM	Eastern tunnel portal: 396,710 m W; 399,295 m E; 6,956,405 m N; 6,954,820 m S Western tunnel portal: 390,770 m W; 392,515 m E; 6,958,010 m N; 6,956,605 m S
Dispersion time	3,600 s
Number of particles per second	400
Surface roughness	Variable
Latitude	-27
Buildings	None
Concentration grid	
Vertical thickness of concentration layers	1 m
Horizontal grid resolution	5 m
Number of horizontal slices	1
Height above ground level	2 m
Internal flow field grid	
Horizontal grid resolution	5 m
Vertical thickness of first layer	2 m
Vertical stretching factor	1.01
Number of cells in z-direction	40

Table note:

1 Coordinates provided are GDA, zone 56 (m).

5.3.3 Source parameters

The following sections present the source parameters in CALPUFF and GRAL utilised for dispersion modelling of emissions for the Project.

5.3.3.1 CALPUFF

Table 5.17 presents the CALPUFF source parameters utilised in the dispersion modelling of the Project. The rail emission sources for diesel emissions and fugitive coal dust were modelled as a line using continuous segmented volume sources, utilising guidance from US EPA (1992). Utilising this method is it possible to emulate the effects of initial dispersion due to plume downwash (CARB 2004).

The idling point sources represent Express Freight trains that consist of three NR Class locomotives. The locomotive exit temperatures were sourced from locomotive emissions testing for the NSW EPA completed by (ABMARC 2016). Other cited emission parameters for idling locomotives were sourced from CARB (2004) for a similar locomotive type and size.

Table 5.17 also presents the initial horizontal and vertical spreads used in the modelling of train travel. The spreads have been calculated using Lakes Environmental guidance (Lakes Environmental 2017) on the calculation of dispersion from haul roads, which is based on the US EPA Haul Road Workgroup Report (US EPA 2012). The dispersion of emissions from haul roads is very similar to dispersion from rail lines and is considered the most appropriate guidance. Initial vertical spread (sigma Z) is calculated by dividing the top of plume height (m) by 2.15. Top of plume height is equal to the vehicle (train) height (3.9 m) multiplied by 1.7 (6.63 m). Initial horizontal spread (sigma Y) is calculated by dividing the distance between the centre points of the segmented volume sources by 2.15. Plume width is calculated as the vehicle (train) width (3 m) plus 6 m to account for the mixing zone of a single line track. Figure 5.3 presents the location of modelled sources. The coordinates listed are in the same format as required by CALPUFF.

Table 5.17 CALPUFF source parameters

Source	Source type	Location (GDA 96, zone 56, m)	Release height above ground level (m)	Parameters
G2H-1	Segmented volume sources (3.0 km, 167 sources)	386,406; 6,958,276 to 389,292; 6,957,796	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
G2H-2	Segmented volume sources (2.8 km, 156 sources)	389,301;6,957,796 to 391,911;6,957,180	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
G2H-3	Segmented volume sources (4.0 km, 222 sources)	398,039;6,955,506 to 401,754;6,955,910	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
G2H-4	Segmented volume sources (4.0 km, 223 sources)	401,758;6,955,909 to 405,133;6,957,022	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
G2H-5	Segmented volume sources (4.0 km, 222 sources)	405,136;6,957,020 to 411,922;6,953,852	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
G2H-6	Segmented volume sources (4.0 km, 221 sources)	408,565;6,955,531 to 411,918;6,953,853	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
B2G	Segmented volume sources (1.0 km, 56 sources)	386,398; 6,958,279 to 385,419; 6,958,432	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
H2C	Segmented volume sources (1.0 km, 57 sources)	411921; 6953850 to 412916; 6953668	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)

Source	Source type	Location (GDA 96, zone 56, m)	Release height above ground level (m)	Parameters
West Moreton System	Segmented volume sources (1.0 km, 57 sources)	385672; 6958713 to 386543; 6958233	3.3	18.6 m (initial horizontal spread) 3.1 m (initial vertical spread)
Crossing Loop 1 (grid 1)	Point source (6 sources)	391,708; 6,957,323 391,690; 6,957,337 391,671; 6,957,351 389,936; 6,957,838 389,959; 6,957,839 389,982; 6,957,841	4.3 (0.1 m above locomotive engine)	134°C (exit temperature) 0.6 m (stack diameter) 2.4 m/s (exit velocity)
Crossing Loop 2 (grid 2)	Point source (6 sources)	398,248 ;6,955,506 398,271; 6,955,508 398,293; 6,955,510 400,018; 6,955,880 399,998; 6,955,892 399,978; 6,955,903	4.3 (0.1 m above locomotive engine)	134°C (exit temperature) 0.6 m (stack diameter) 2.4 m/s (exit velocity)
Crossing Loop 3 (grid 3)	Point source (6 sources)	406,089; 6,956,129 406,108; 6,956,118 406,128; 6,956,106 407,901; 6,955,429 407,878; 6,955,425 407,856; 6,955,422	4.3 (0.1 m above locomotive engine)	134°C (exit temperature) 0.6 m (stack diameter) 2.4 m/s (exit velocity)

Table notes:

a Inclusive of ~1 km of B2G project
b Inclusive of ~1 km of H2C project

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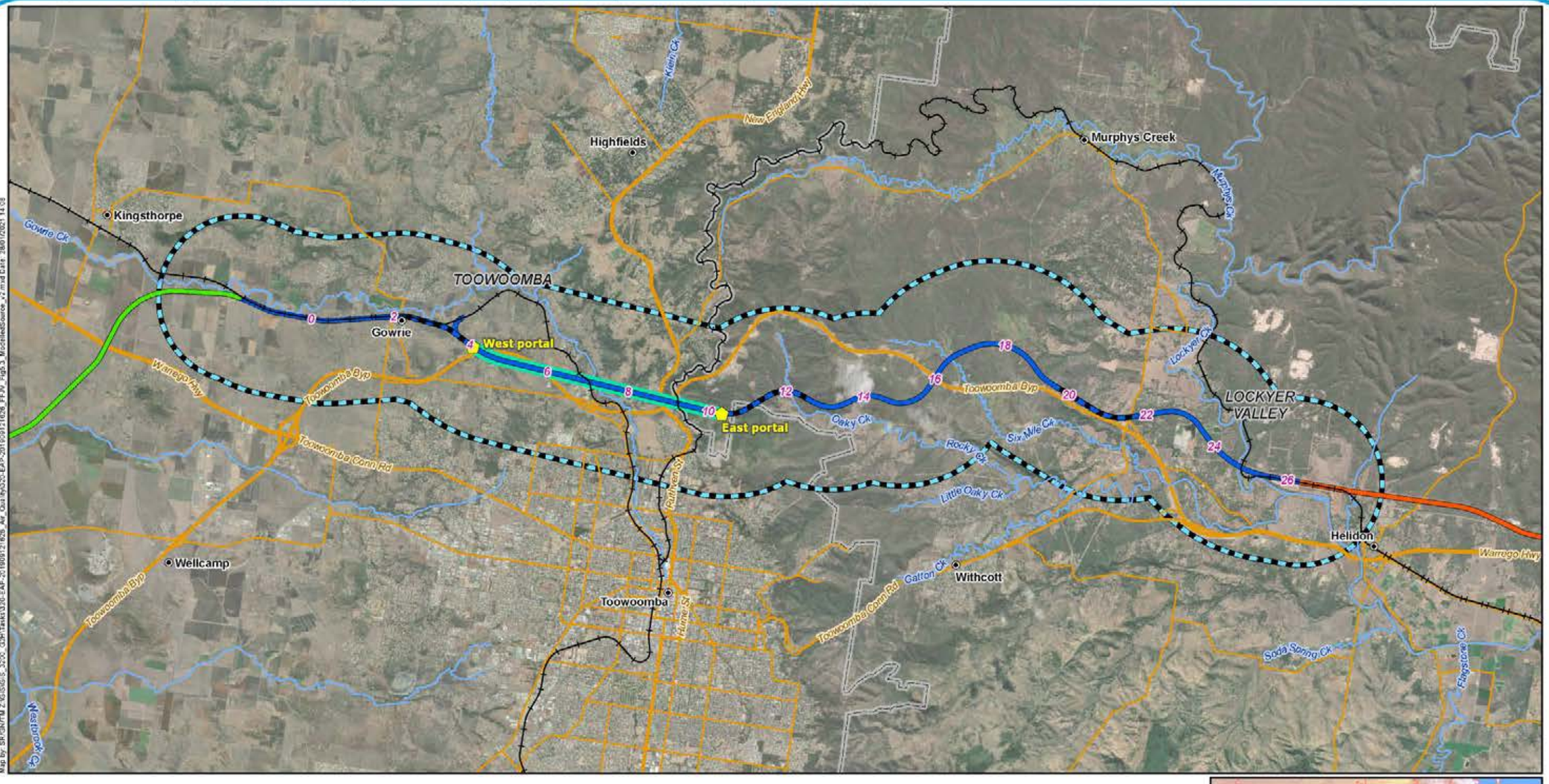

Map by: SR\GIN\TM Z:\GIS\GIS_3200_GIS\Tasks\3326-EAF-20190912\626_FFW_Fig5.3_ModelledSource_v2.mxd Date: 28/01/2021 14:03

Legend

- 5 Chainage (km)
- Localities
- Tunnel portals
- B2G project alignment
- G2H project alignment
- H2C project alignment
- Existing rail
- Crossing loops
- Tunnel
- Major roads
- Minor roads
- Watercourses
- Air Quality study area
- Local Government Areas



A3 scale: 1:100,000

0 1 2 3 4 5km

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Figure 5.3:
Modelled sources

5.3.3.2 GRAL

Portal exit velocities have been calculated from results of tunnel ventilation modelling completed as part of the tunnel systems ventilation design. Table 5.18 presents the calculated average portal velocities for the trains which were included in the modelling.

Table 5.18 Toowoomba Range tunnel portal exit velocities derived from tunnel design ventilation modelling

Train	Direction of travel	Western tunnel portal average velocity (m/s)	Eastern tunnel portal average velocity (m/s)
Express	Uphill (westbound)	4.4	6.0
	Downhill (eastbound)	4.9	5.9
Coal	Uphill (westbound)	4.2	4.6
	Downhill (eastbound)	5.6	6.2
Super	Uphill (westbound)	4.4	6.9
	Downhill (eastbound)	5.1	6.0
Weighted Average		**4.8**	**5.6**

Table 5.19 presents the GRAL source parameters utilised in the dispersion modelling of the Project. The coordinates presented in Table 5.19 are in the same format as required by GRAL.

In absence of ventilation temperature information, the temperature differential has been assumed to be 0 kelvin, which effectively assumes the plume will be at ambient temperature. This is a conservative assumption as it will model the plume as non-buoyant, resulting in decreased dispersion from the portal.

GRAL does not require initial spread parameters for portal emission sources.

Table 5.19 GRAL source parameters

Source	Source type	Location (GDA 96, zone 56, m)	Release height above ground level (m)	Parameters
Western tunnel portal	Portal	391,944; 6,957,163	0.0	0 K (temperature differential) 4.8 m/s (exit velocity) 60 m^2 (portal open area) 5 m (portal height)
Eastern tunnel portal	Portal	398,058; 6,955,499	0.0	0 K (temperature differential) 5.6 m/s (exit velocity) 60 m^2 (portal open area) 5 m (portal height)

5.3.4 Terrain and land use data

The underlying terrain and dominant land use are important functions of plume transport modelling. Gridded terrain elevations for the modelling domain were derived from the Shuttle Radar Topography Mission (SRTM) one arc-second or around 30 m resolution data. To reflect the final terrain formations, post construction, this data was supplemented with detailed 1 m data that reflects bulk earthworks along the Project alignment and Toowoomba Range tunnel portals.

Land use within the Project disturbance footprint and surrounding area primarily consists of rural and agricultural areas, which are interspersed with rangeland and forest land. Land use data within the AQIA study area has been derived from the QLD Land Use Mapping Program (QLUMP) utilising the Australian Land Use and Management Classification (ABARES 2016). The data are representative of the actual area associated with the Project, are recent and of a very fine resolution to increase the accuracy of the modelling. The land use data used in this application are different to the default land use data used in The Air Pollution Model (TAPM) and for most CALMET model applications outside of the United States, which are the USGS one-kilometre land use data. Until recently, the USGS one-kilometre global land use data set was the most readily available data set for air quality applications. Limitations of this data set; however, include its age (more than 20 years old), coarse resolution (between 900 m and 1.2 km), and the fact that it is categorised according to the North American land use category system, which does not correspond to all relevant Australian land use types.

As stated above, plume transport is an important function of the underlying dominant land use. The inclusion of the Australian land use data set is, therefore, an important relevant addition to this modelling application as the data are recent, relevant and of a fine resolution.

With the exception of emissions from point sources (e.g. exhaust stacks), CALPUFF is unable to model the influence of large structures on the dispersion of pollutants. GRAL is able to consider structures and the wind flow and dispersion around structures, but there are no structures near the tunnel portals with the exception of the tunnel itself. As discussed in Section 5.3.2.7, modelling of locomotives idling at crossing loops has included “buildings” in the model to account for the influence of downwash caused by the structure of the locomotives. The absence of the inclusion of the influence of structures on emissions from the rail alignment (train travel along the alignment) is not expected to be significant based on the distance from the Project alignment to sensitive receptors and the distributed nature of the source.

5.3.5 Conversion of NO_X to NO_2

NO_x are produced in most combustion processes and are formed during the oxidation of nitrogen in fuel and nitrogen in the air. During high-temperature processes, a variety of oxides are formed including NO and NO_2. NO will generally comprise 95 per cent of the volume of NO_X at the point of emission. The remaining NO_X will primarily consist of NO_2. The conversion of NO to NO_2 requires O_3 to be present in the air, as O_3 is the catalyst for the conversion. Ultimately, however, all NO emitted into the atmosphere is oxidised to NO_2 and then further to other higher NO_x.

The US EPA’s OLM was used to predict ground-level concentrations of NO_2. The OLM is based on the assumption that approximately 10 per cent of the initial NO_X emissions are emitted as NO_2. If the O_3 concentration is greater than 90 per cent of the predicted NO_X concentrations, all the NO_X is assumed to be converted to NO_2, otherwise NO_2 concentrations are predicted using the equation:

$$NO_2 = 46/48 \times O_3 + 0.1 \times NO_x$$

This method assumes instant conversion of NO to NO_2 in the plume, which can lead to overestimation of concentrations close to the source since conversion would usually occur over a period of hours. This method is described in detail in NSW EPA (2016). It should be noted that the OLM is a conservative approach as explained in Appendix D.

The conversion of NOx to NO_2 has been assumed to be the same inside the tunnel as for outside the tunnel. Residence time for NOx within the tunnel will be longer than for emissions outside the tunnel and therefore allows greater potential to oxidise to NO_2. However, the OLM method assumes instant conversion and therefore the approach is considered appropriate for the tunnel.

Due to its proximity to the Project alignment, background O_3 data from the Mutdapilly monitoring station were used to convert the modelled NO_2 concentrations in accordance with the OLM methodology presented in NSW EPA (2016). To facilitate the use of the OLM, hourly sequential O_3 and NO_2 monitoring data for the year 2013 from the Mutdapilly monitoring station has been used. Monitoring data for 2013 has been used to align with the meteorological modelling (as per Section 5.3.2.1).

Figure 5.4 presents the variation plots of background concentrations for NO_2 and O_3 for Mutdapilly for the year 2013. The hourly, daily and monthly variations shown in Figure 5.4 for 2013 for NO_2 and O_3 are consistent with recent years at Mutdapilly.

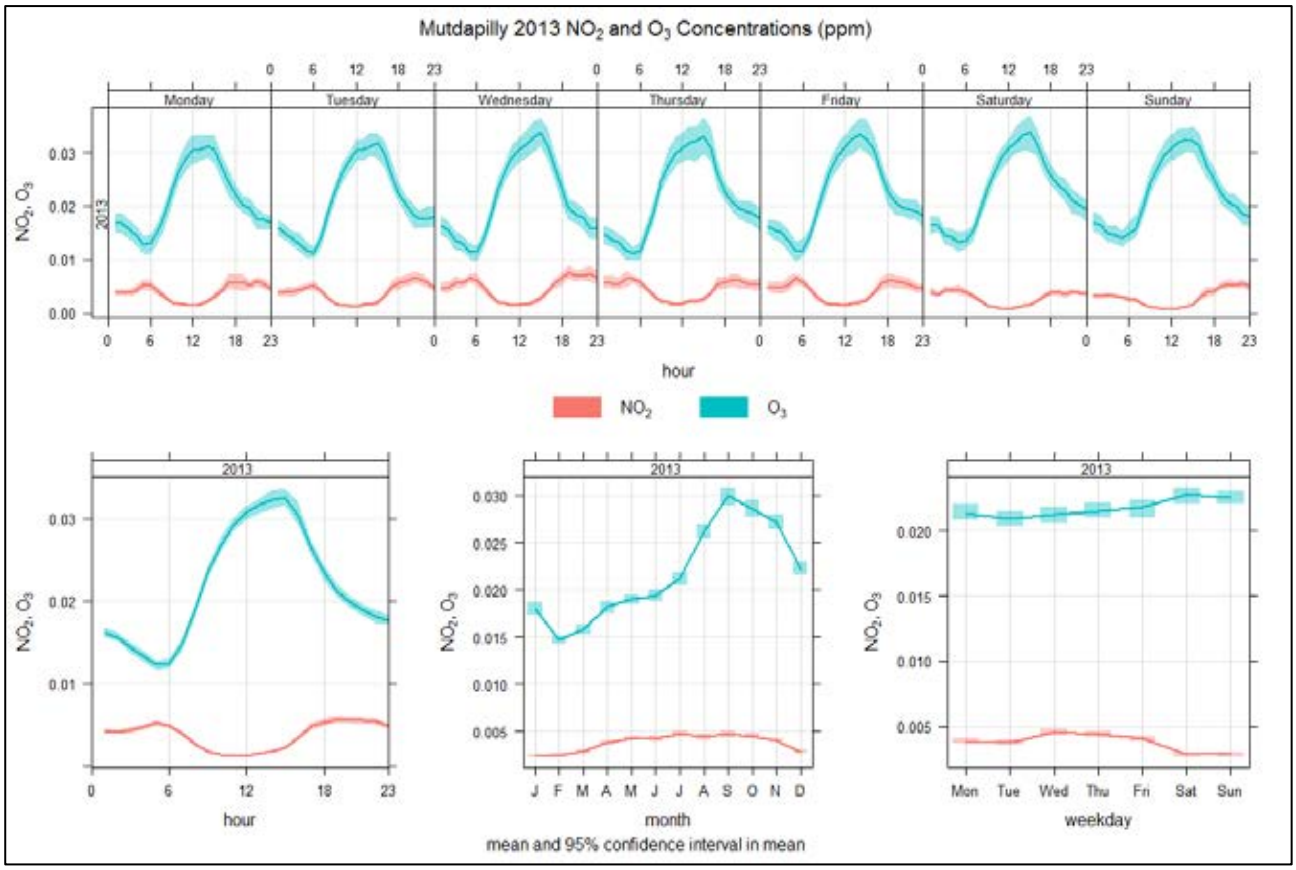

Figure 5.4 **Variation plots of concentrations for NO_2 and O_3 from the Mutdapilly DES monitoring station for 2013**

5.3.6 Limitations

The atmosphere is a complex, physical system, and the movement of air in a given location is dependent on a number of different variables, including temperature, topography and land use, as well as larger-scale synoptic processes. Dispersion modelling is a method of simulating the movement of air pollutants in the atmosphere using mathematical equations. The model equations necessarily involve some level of simplification of these very complex processes based on our understanding of the processes involved and their interactions, available input data, and processing time and data storage limitations.

These simplifications come at the expense of accuracy, which particularly affects model predictions during certain meteorological conditions and source emission types. For example, the prediction of pollutant dispersion under low wind speed conditions (typically defined as those wind speeds less than 1 m/s) or for low-level, non-buoyant sources, is problematic for most dispersion models. To accommodate these known deficiencies, the model outputs tend to provide conservative estimates of pollutant concentrations at particular locations.

While the models contain a large number of variables that can be modified to increase the accuracy of the predictions under any given circumstances, the constraints of model use in a commercial setting, as well as the lack of data against which to compare the results in most instances, typically precludes extensive testing of the impacts of modification of these variables. With this in mind, model developers typically specify a range of default values for model variables that are applicable under most modelling circumstances. These default values are recommended for use unless there is sufficient evidence to support their modification.

As a result, the results of dispersion modelling provide an indication of the likely level of pollutants within the modelling domain. While the models, when used appropriately and with high quality input data, can provide very good indications of the scale of pollutant concentrations and the likely locations of the maximum concentrations occurring, their outputs should not be considered to be representative of exact pollutant concentrations at any given location or point in time. As stated above, however, the model predictions are typically conservative, and tend to over predict maximum pollutant concentrations at receiver locations.

This assessment was undertaken with the data available at the time of the assessment. Should changes to the Project be made, further assessment may be required to determine if the findings of this assessment are still applicable.

5.3.7 Water tank quality

5.3.7.1 Potential impacts

In rural and remote Australia where reticulated water supply is not always available, the use of domestic rainwater tanks is common practice. Rainfall is collected from roof run-off, and where installed is most commonly used as the primary source of household drinking water (enHealth 2010). Rainwater stored in tanks has the potential to be contaminated by chemical, physical and microbial sources, and become a hazard to human health. Industrial and traffic emissions have the potential to be a source of chemical contamination through their atmospheric deposition onto rooves where water is collected (Gunawardena 2012).

5.3.7.2 Fugitive coal dust deposition

Fugitive coal dust emissions from rail transport along the Project rail corridor have potential to be deposited on surfaces that lead to rainwater tanks. Coal may contain many trace elements, some of which include the following – sulfur (S), chlorine (Cl), arsenic (As), boron (B), cadmium (Cd), lead (Pb), mercury (Hg), molybdenum (Mo), selenium (Se), chromium (Cr), copper (Cu), fluorine (F), nickel (Ni), vanadium (V), and zinc (Zn). Several of these compounds can have toxic and chronic health effects, which is dependent on exposure length, concentration, and path of ingestion. A leaching test study completed by Lucas et al. (2009) showed through experimentation that even though these compounds exist within coal and coal dust, they leach negligible amounts into receiving water, and measured concentrations were well below the 2011 ADWG (NHMRC 2018). Therefore, it is expected that coal dust will not pose a significant risk to drinking water and has not been included in the assessment of water quality impacts.

5.3.7.3 Assessing impacts to water tank quality

The potential for the operation of the Project to impact tank water quality collected via roof catchment has been investigated. Using the emissions inventory developed for assessment of impacts to air quality, dust deposition modelling was also completed using CALPUFF to determine the impact of diesel combustion emissions on tank water quality. As per the assessment of impacts to air quality and as required by the ToR, dust deposition was predicted for all receptors within the AQIA study area. The methodology for predicting the potential impact to water tank quality is summarised as follows:

- Rainwater collection systems can have first flush devices which take the first water captured by rooves and divert it for disposal rather than collection in a water tank. First flush systems were not assumed to be installed for any of the receptors considered.
- Annual average dust deposition rates were predicted for every receptor in the AQIA study area for peak and typical train operations. Every receptor was assumed to have a water tank, and the roof area (collection area) for each receptor was assumed to be 200 square metres (m^2).

- It was assumed that all deposited dust at each receptor (200 m^2 roof area) was collected by a 10,000 litre (L) rainwater tank which was 10 per cent full resulting in a receiving water volume of 1,000 L. This conservative assumption allows for periods where there may be prolonged periods of drought and short rainfall events that wash deposited pollutants into rainwater tanks.
- The objectives used for the assessment of impacts to water quality were taken from ADWG (NHMRC 2018), which provides guideline water concentrations for arsenic, cadmium, lead, nickel and chromium VI, which are all metals.
- The concentration of metals in water tanks was determined by taking the predicted annual average dust deposition level (e.g. 2 milligrams per square metre (mg/m^2)), multiplying it by the assumed roof area (200 m^2) to determine total mass (e.g. 400 mg), and then speciating the predicted dust deposition level into metal concentrations using the diesel locomotive emission factors (refer Table 5.8 in Section 5.2.1.1) used in the assessment.
- The predicted water concentrations for each species were then assessed against the objectives prescribed by NHMRC (refer Section 3.7).

The methodology applied is described for water tanks, however, it is also applicable for assessment of impacts to water quality for dams assuming that the surface area (roof area) and receiving water volumes (1,000 L are comparable.

It is highlighted that Withcott Seedlings at Withcott is located within the AQIA study area and the Project alignment travels between water storage dams at this land use. There is uncertainty with respect to the volume of the storage dams at Withcott Seedlings and the catchment surface area for each dam. However, the water volume and catchment area assumed (1,000 L and 200 m^2) and the deposition period (annual deposition) are all expected to be conservative estimates for water dams at Withcott Seedlings.

Detailed dispersion modelling is not typically undertaken for construction activity and has not been undertaken for the construction phase assessment of the Project. Construction dust has therefore not been considered for the assessment of tank water quality.

Similarly, fugitive emissions from fuel storage tanks required for the construction phase have not been considered for the assessment of tank water quality. Fugitive emissions from fuel storage tanks will be gaseous and will not be a significant issue with respect to deposition and tank water quality.

5.3.8 Agricultural freight odour

To assess the nuisance impacts that may arise from agricultural freight trains, a qualitative assessment utilising FIDOL factors has been undertaken to determine the likelihood of odour nuisance. The following factors, described using the acronym FIDOL, are widely accepted as being important dimensions of odour nuisance:

- Frequency (F) – How often an individual is exposed to the odour
- Intensity (I) – The strength of the odour
- Duration (D) – The length of exposure
- Offensiveness (O) – The offensiveness or intrinsic character, known as the hedonic tone of the odour, may be pleasant, neutral, or unpleasant
- Location (L) – The type of land use and nature of human activities in the vicinity of an odour source.

In addition to the above, sensitivity of the receiving community and “offensiveness” of the odours likely to be emitted was considered in the qualitative odour analysis.

5.4 Cumulative impact risk assessment

As part of the EIS process for the Project and as typically required for AQIAs, a cumulative impact assessment is required. AQIAs are inherently cumulative assessments as they are required to consider background air quality when assessing against air quality goals.

In addition to consideration of background air quality (refer Section 4.4) this assessment has also considered cumulative impacts to sensitive receptors in the operational phase of the Project by assessing emissions from the adjoining Inland Rail projects (B2G and H2C, refer Section 5.3.1.5), train traffic on the QR West Moreton System rail corridor (refer Section 5.3.1.6), and road traffic from the Toowoomba Bypass (refer Section 5.3.1.7). No other projects were identified which required inclusion in the assessment of cumulative operational phase impacts. The results of the operational phase assessment are discussed in Section 7.

As cumulative impacts for the operation phase of the Project have been considered in detail in this assessment via dispersion modelling, further assessment of cumulative impacts is only required for the construction phase of the Project.

A qualitative cumulative impact assessment (CIA) has been undertaken for the construction phase of the Project. This CIA has considered B2G, H2C, Harlaxton Quarry and the Toowoomba Bypass in addition to other projects of relevance to the AQIA. The assessment has been undertaken using a risk matrix, following the same approach as provided in Chapter 22: Cumulative impacts, but adapted to consider individual projects. Discussion of the assessment method and results is provided in Section 8.

5.5 Decommissioning phase

Given the uncertainty associated with timeframe for decommissioning, this phase has not been considered further in this AQIA.

6 Construction air quality impact assessment

The following sections provide an assessment of air quality impacts during the construction of the Project.

The highest proportion of construction emissions results from mechanical activity, e.g. material movement or mobile equipment activity, which typically generate coarser particulate emissions (PM_{10} and TSP). Airborne PM_{10} and deposited dust (TSP) are the main pollutants of concern for construction activities and these pollutant species are the focus of the assessment for construction dust. Airborne PM_{10} has the potential to impact human health due to inhalation of particulate matter, whilst deposited dust has the potential to cause nuisance impacts.

$PM_{2.5}$ is typically emitted in minor quantities from mechanical sources and is more predominant from combustion point sources (i.e. combustion engines). Point source emissions of combustion gases (e.g. NO_x and CO) and $PM_{2.5}$ from diesel construction vehicles and mobile plant will be significantly lower than particulate emissions from construction activities. Emissions of combustion gases and $PM_{2.5}$ are considered unlikely to result in exceedance of air quality goals or cause nuisance to sensitive receptors and therefore have not been assessed for the construction phase. However, mitigation measures for these sources have been identified to minimise the potential for impacts on sensitive receptors.

In addition to construction dust, odour and VOCs will be emitted as fugitive emissions from fuel tanks located at laydown areas. Impacts from fuel storage have been assessed in Section 6.2.

Assessment of crushing plant and blasting, which may be required to facilitate construction, is provided in Sections 6.3 and 6.4. No other significant pollutant emissions (excluding dust, odour and VOCs) are anticipated from the construction phase of the Project.

The assessment of construction phase impacts considers construction traffic haul routes. However, the assessment does not include consideration of the use of private roads. The use of any private roads during construction would require a specific agreement between the construction contractor and the private road owner.

6.1 Dust

The dust impact assessment was undertaken based on the methodology described in the UK IAQM Guidance on the assessment of dust from demolition and construction (UK IAQM 2014). The risk of dust deposition (TSP) and human health impacts due to particulate matter (PM_{10}) on surrounding areas were determined based on the scale of activities and proximity to sensitive receptors. The IAQM method uses a four-step process to assess dust impacts:

- Step 1: Screening based on distance to nearest sensitive receptors
- Step 2: Assess risk of dust impacts from activities based on:
  - Scale and nature of the works, which determines the potential dust emission magnitude
  - Sensitivity of the area
- Step 3: Determine site-specific mitigation for dust-emitting activities
- Step 4: Reassess risk of dust impacts after mitigation has been considered.

Figure 6.1 presents the location of the Project disturbance footprint within the AQIA study area, including laydown areas and haul routes.

The IAQM assessment process is described in the following sections.

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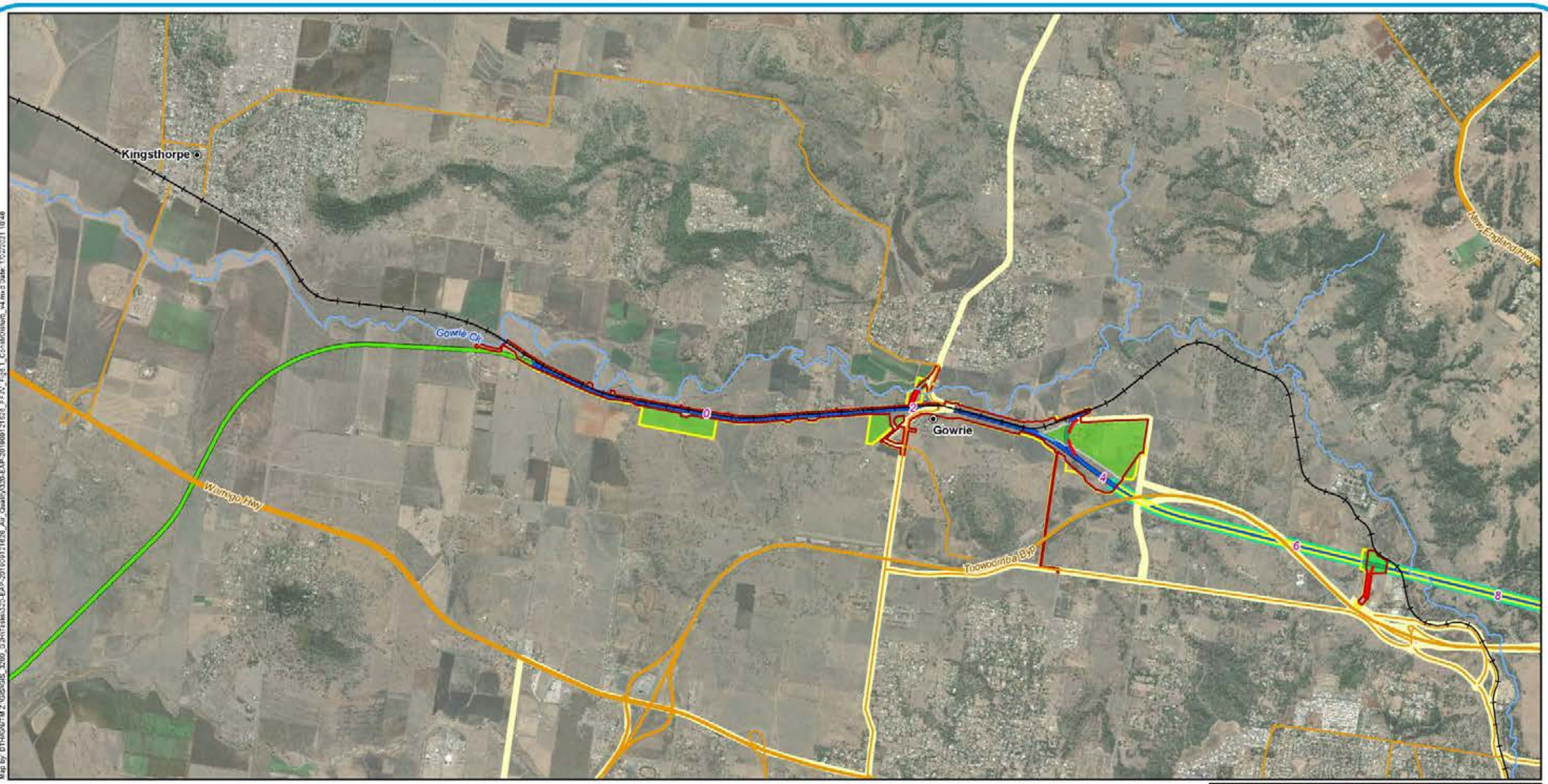
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community





Legend

- 5 Chainage (km)
- Localities
- Existing rail
- Major roads
- Minor roads
- Watercourses
- B2G project alignment
- G2H project alignment
- Tunnel
- Laydown access tracks
- Construction routes
- Proposed laydown areas
- EIS disturbance footprint
- Permanent disturbance footprint

A3 scale: 1:40,000

0 0.3 0.6 0.9 1.2 1.5km

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Gowrie to Helidon

Figure 6.1a:
Construction disturbance areas

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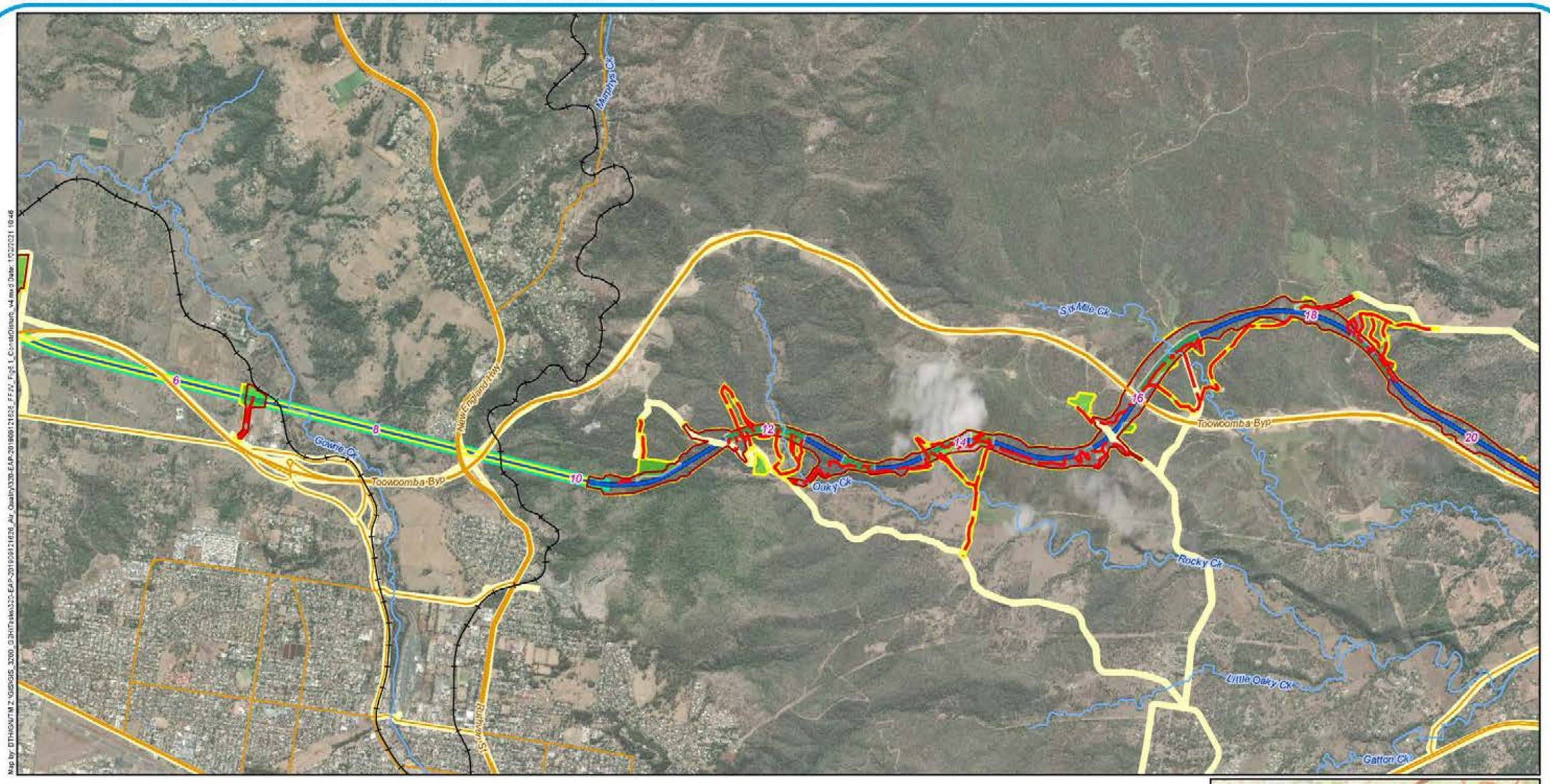
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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Legend

- 5 Chainage (km)
- Localities
- Existing rail
- Major roads
- Minor roads
- Watercourses
- G2H project alignment
- Tunnel
- Laydown access tracks
- Construction routes
- Proposed laydown areas
- EIS disturbance footprint
- Permanent disturbance footprint



A3 scale: 1:40,000

0 0.3 0.6 0.9 1.2 1.5km

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Gowrie to Helidon

Figure 6.1b: Construction disturbance areas

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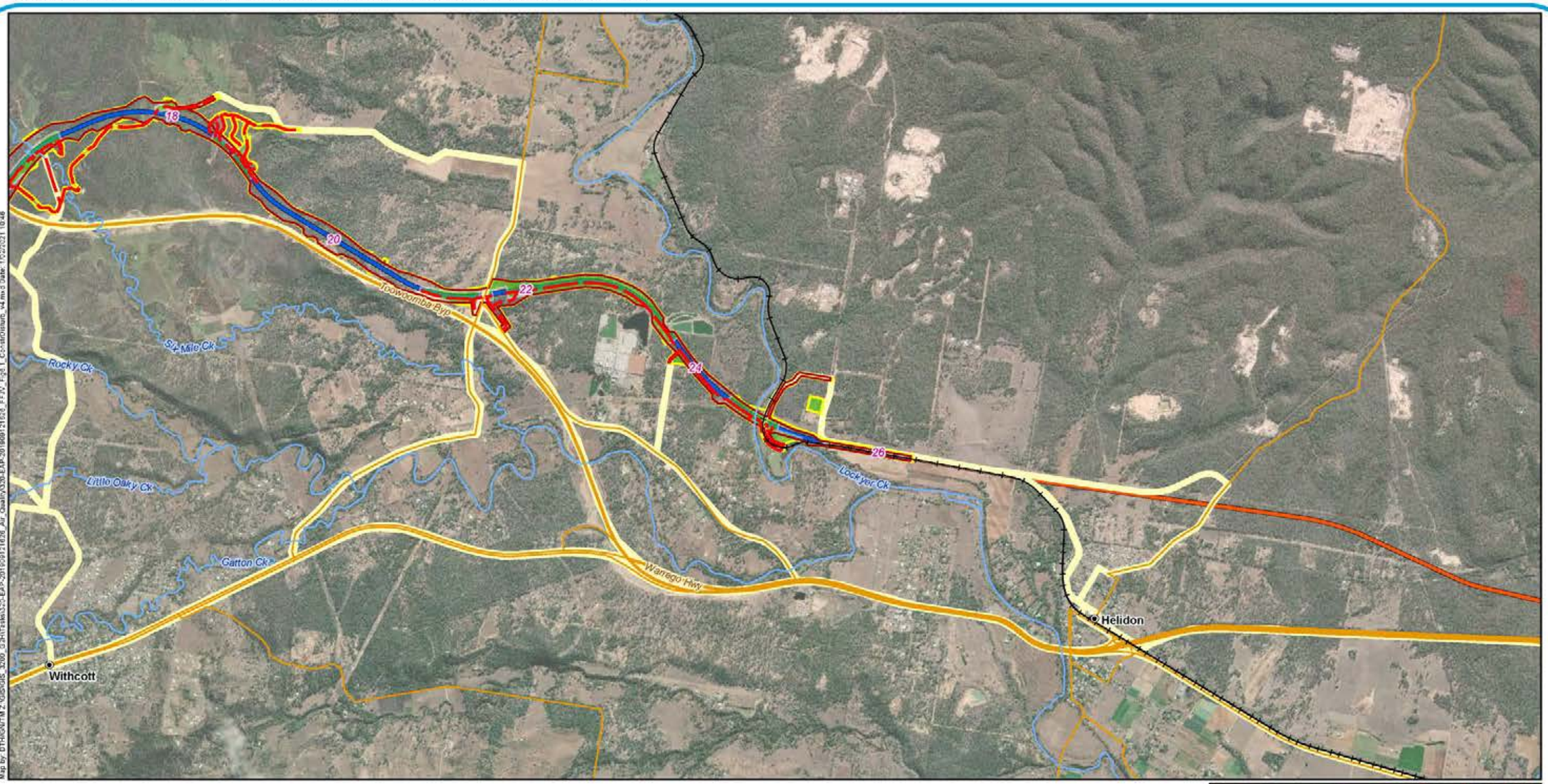
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Map by: DTMGNTM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190912\1626_Air_Quality\330-EAP-20190912\1626_FFJV_Fig6.1_ConstrDistum_v4.mxd Date: 1/02/2021 10:46

Legend

- 5 Chainage (km)
- Localities
- Existing rail
- Major roads
- Minor roads
- Watercourses
- G2H project alignment
- H2C project alignment
- Tunnel
- Laydown access tracks
- Construction routes
- Proposed laydown areas
- EIS disturbance footprint
- Permanent disturbance footprint



A3 scale: 1:40,000
0 0.3 0.6 0.9 1.2 1.5km

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Gowrie to Helidon
Figure 6.1c:
Construction disturbance areas

6.1.1 Step 1 – Screening assessment

The IAQM method recommends further assessment of dust impacts for construction activities where sensitive receptors are located closer than:

- 350 m from the boundary of the Project activity
- 50 m from the route used by all construction vehicles (including heavy vehicles) on public roads more than 500 m from the site entrance.

The total number of identified sensitive receptors within the AQIA study area is 2,829, with 2,828 of these receptors considered to be sensitive during the construction phase of the Project (receptor R_2323 represents a site office within a laydown area for the Project and has not been considered). Their respective distances from the Project disturbance footprint are shown in Table 6.1. For the purpose of the assessment, only construction traffic routes within the AQIA study area have been considered. It is considered unlikely that impacts to sensitive receptors located near construction traffic routes outside of the AQIA study area will be significant, and therefore construction traffic routes outside the AQIA study area have not been assessed.

The sensitivity of the AQIA study area to construction dust impacts is determined considering the number of sensitive receptors and the separation distance to active construction areas. For the purpose of the construction assessment, the separation distance categories (as presented in Table 6.1) have been determined across the entire length of the Project, as opposed to breaking construction areas into smaller segments. In reality, construction air quality impacts will be localised to specific construction areas (e.g. laydown areas) and areas with a higher density of sensitive receptors (e.g. townships) will be more sensitive than sparsely populated rural areas.

Table 6.1 Summary of sensitive receptor distances to the Project disturbance footprint

Distance from (m)	Number of receptors			
	Access tracks	Laydown areas	Construction corridor	Total [2]
0 [1]	0	4	7	7
<20	20	6	29	42
21 to 50	186	4	28	196
51 to 100	263	17	29	266
101 to 350	935	85	184	931
>350 and ≤ 2,000	1,425	2,716	2,560	1,393
Total[3]	**2,828**			

Table notes:

1 Sensitive receptors located within the Project disturbance footprint are assumed to be present during the construction phase for the assessment with the exception of receptor R_2323.
2 Total number of sensitive receptors that are located within the distance category away from the Project disturbance footprint.
3 The total number of identified sensitive receptors within the AQIA study area is 2,829. However, only 2,828 of these receptors are considered to be sensitive during the construction phase of the Project as receptor R_2323 represents a site office within a laydown area for the Project.

Each sensitive receptor within the AQIA study area was identified using a combination of QLD land property information and interrogation of aerial imagery. It is noted that the number of sensitive receptors in the AQIA study area may have minor variations as the Project progresses.

6.1.2 Step 2 – Dust risk assessment

Step 2 in the IAQM is a risk assessment tool designed to appraise the potential for dust impacts due to unmitigated dust emissions from a construction project. The key components of the risk assessment are defining the dust emission magnitudes (Step 2A), the surrounding area sensitivity (Step 2B), and then combining these in a risk matrix (Step 2C) to determine an overall risk of dust impacts.

6.1.3 Step 2A – Dust emission magnitude

Dust emission magnitudes are estimated according to the scale of works being undertaken and other considerations such as meteorology, types of material being used, or general construction or demolition methodology. The IAQM guidance provides examples to aid classification, as presented in the following excerpt:

The dust emission magnitude is based on the scale of the anticipated works and should be classified as Small, Medium, or Large. The following are examples of how the potential dust emission magnitude for different activities can be defined. Note that, in each case, not all the criteria need to be met, and that other criteria may be used if justified in the assessment:

Demolition: Any activity involved with the removal of an existing structure (or structures). This may also be referred to as de-construction, specifically when a building is to be removed a small part at a time. Example definitions for demolition are:

- *Large: Total building volume >50,000 m^3, potentially dusty construction material (e.g. concrete), on-site crushing and screening, demolition activities >20 m above ground level.*
- *Medium: Total building volume 20,000 m^3 to 50,000 m^3, potentially dusty construction material, demolition activities 10 to 20 m above ground level.*
- *Small: Total building volume <20,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber), demolition activities <10 m above ground, demolition during wetter months.*

Earthworks: Earthworks will primarily involve excavating material, haulage, tipping and stockpiling. This may also involve levelling the site and landscaping. Example definitions for earthworks are:

- *Large: Total site area >10,000 m^2, potentially dusty soil type (e.g. clay, which will be prone to suspension when dry due to small particle size), >10 heavy earth moving vehicles active at any one time, formation of bunds >8 m in height, total material moved >100,000 tonnes.*
- *Medium: Total site area 2,500 m^2 to 10,000 m^2, moderately dusty soil type (e.g. silt), 5 to 10 heavy earth moving vehicles active at any one time, formation of bunds 4 m to 8 m in height, total material moved 20,000 tonnes to 100,000 tonnes.*
- *Small: Total site area <2,000 m^2 – soil type with large grain size, e.g. sand, <5 heavy earth moving vehicles at one time, formation of bunds <4 m in height, total material moved <20,000 tonnes, earthworks during wetter months.*

Construction: The key issues when determining the potential dust emission magnitude during the construction phase include the size of the building(s)/infrastructure, method of construction, construction materials, and duration of build. Example definitions for construction are:

- *Large: Total building volume >100,000 m^3, on site concrete batching, sandblasting.*
- *Medium: Total building volume 25,000 m^3 to 100,000 m^3, potentially dusty construction material (e.g. concrete), on site concrete batching.*
- *Small: Total building volume <25,000 m^3, construction material with low potential for dust release (e.g. metal cladding or timber).*

Trackout: Factors which determine the dust emission magnitude are vehicle size, vehicle speed, vehicle numbers, geology and duration. As with all other potential sources, professional judgement must be applied when classifying trackout into one of the dust emission magnitude categories. Example definitions for trackout are:

- *Large: >50 truck (>3.5 tonnes) outward movements in any one day, potentially dusty surface material (e.g. high clay content), unpaved road length 50 m to 100 m.*
- *Medium: 10 to 50 truck (>3.5 tonnes) outward movements in any one day, moderately dusty surface material (e.g. high clay content), unpaved road length 50 m to 100 m.*
- *Small: <10 truck (>3.5 tonnes) outward movements in any one day, surface material with low potential for dust release, unpaved road length <50 m.*

Potential dust emission magnitudes for the Project were estimated based on the IAQM examples listed. Justification and the factors used in determining the magnitudes are presented in Table 6.2. The construction hours for the Project are presented in Section 2.2. Due to time constraints multiple work fronts will be active at any one time along the alignment.

It is highlighted that a significant volume of material is required to be excavated as part of the construction of the Project, including excavation required for the Toowoomba Range tunnel. A permanent stockpile is also proposed to be located at the western tunnel portal. Excavation activities, including those for the tunnel, are considered to be a significant potential dust source.

Table 6.2 Construction activities and dust emission magnitude justification

Activity	Potential dust emission magnitude	Justification
Demolition	Insignificant	▪ Some demolition of homes near the western tunnel portal may be required however the extent of the demolition is not confirmed and is not expected to be a significant source of emissions and therefore the impact of demolition on sensitive receptors has not been assessed.
Earthworks	Large	▪ Crushing and screening for the processing of structural fill is proposed to be undertaken at the laydown area at the western tunnel portal (G2H-LDN003.7) and the existing Toowoomba Bypass project laydown area at the bottom of the range (G2H-LDN015.6). The potential for impacts from crushing is discussed separately in Section 6.3. ▪ Multiple work fronts at any one time along the alignment. ▪ Vegetation clearing will be required along the proposed alignment. Clearing will be staged to limit the size of the disturbed area at any one time where practical. ▪ Topsoil along parts of the alignment will be stripped and stockpiled. Wherever possible and appropriate, material will be reused along the Project alignment. ▪ 24 laydown areas along the alignment, primarily to act as locations for excavation stockpiling. Stockpiles to be located as close as possible to the excavation source. ▪ The total cut across the AQIA study area, excluding the tunnel, has been estimated to be 2,380,000 cubic metres (m^3). Thirteen cuts along the AQIA study area are required to maintain the required track elevations for the proposed rail line. The total length of cut for the Project will be in the range of 6.65 km with a maximum cut depth of 45.7 m. ▪ The volume of material required to be excavated for the tunnel is estimated to be in the order of approximately 730,000 m^3 based on a bored diameter of approximately 12.2m. ▪ A permanent earthworks stockpile is proposed near the western portal of the Toowoomba Range tunnel. ▪ The Toowoomba Range tunnel will be constructed primary using a TBM; though a cut and cover and mine tunnel will be used at the eastern tunnel portal. The TBM will involve a bentonite slurry which will require separation at the western tunnel portal for reuse. ▪ Utility and services relocations. ▪ Earthworks material will be dusty especially, with a higher potential for emissions during dry periods. ▪ No borrow pits are required for the Project.
Construction	Large	▪ Construction period of five years, with multiple work fronts at any one time along the Project alignment. ▪ Installation of railway utilising steel rail, sleepers, ballast and concrete. Concrete and ballast present high dust risk. ▪ Intermediate ventilation shaft and associated infrastructure to be constructed at Cranley. The shaft will be constructed using a conventional shaft sink construction method. The shaft will be approximately 17 m internal diameter and 100 m and deep will be excavated prior to the tunnel construction. ▪ The Project requires 13 new bridge and viaduct structures comprising 10 viaducts and three bridges, totalling approximately 6.7 km in length. ▪ Four temporary site offices.

Activity	Potential dust emission magnitude	Justification
		▪ A concrete batching plant will be located at the western tunnel portal laydown area (G2H-LDN003.7). ▪ Construction of fuel storage areas within five laydown areas with capacities between 20,000 to 40,000 litres. ▪ Laydown areas will include temporary parking facilities for construction workers. ▪ Construction of temporary rail handling facility. ▪ Construction of temporary and permanent fencing. ▪ Approximately 2,120,000 m^3 of fill material will be needed for the construction of embankments for the Project with a total length of approximately 15.4 km with a maximum embankment height of 33.3 m. ▪ Construction of the bridges, viaducts and the eastern tunnel portal will require piling rigs.
Trackout	Large	▪ Multiple work fronts at any one time along alignment. ▪ High amount of daily vehicle movements expected per work site (both light and heavy vehicles). ▪ A ballast handling facility will be established so that ballast can be delivered along the alignment utilising a train consist. Movement of ballast from sources, and between laydown areas and ballast handling facility via heavy haulage trucks. ▪ Access tracks not designated as road maintenance access roads will be rehabilitated or left in-situ subject to relevant landholder agreements.

Emissions of TSP and PM_{10} from construction have been estimated for loading, unloading and haulage of cut and fill material (hereafter material) to provide an indication of the quantity of emissions from these sources. Emissions have been estimated using the emission factors presented in the NPI Emissions estimation technique manual for Mining (NPI 2012), which are also referenced by the DTMR Road Traffic Air Quality Management Manual (DTMR 2009). Although the emission formulas in this NPI manual are prescribed for mining, they are considered appropriate to estimate emissions from loading, unloading and haulage due to the similarity of these activities between mining and construction.

Construction dust will be generated by numerous activities (as described in Table 6.2) and will not be limited to loading, unloading and haulage. However, these activities have been considered to provide an indication of potential emissions as they will occur along the Project alignment.

Emissions have been estimated assuming that the majority of earthworks for the Project are undertaken over a period of two years, and that the volume of cut and fill required to be loaded and unloaded is 2,380,000 m^3 (as per Table 6.2). Assuming a density of 2,000 kg/m^3, this equates to 4,760,000 tonnes of material which will require handling. The estimated indicative construction dust emissions are summarised as follows:

- Dust from loading material has been estimated to generate emissions at a rate of 0.16 kg/tonne for TSP and 0.08 kg/tonne for PM_{10}. The total volume of material estimated to be loaded per day across the entire Project (assuming two year earthworks duration) is approximately 4,330 m^3, or 8,660 tonnes based on the assumed density of 2,000 kg/m^3. This results in estimated total emissions of approximately 1,386 kg/day of TSP and 693 kg/day of PM_{10} across the entire Project. Chapter 13.2.3 of the Compilation of Air Pollutant Emission Factors (US EPA 1998) states that wet suppression and reduction of wind speed (e.g. via wind breaks) are the recommended control measures for cut and fill material handling, which have estimated control efficiencies of 50 per cent and 30 per cent respectively (NPI 2012)
- Dust from uncontrolled (no mitigation) unloading of material has been estimated to generate emissions at a rate of 0.012 kg/tonne for TSP and 0.004 kg/tonne for PM_{10}. Assuming the total volume of material which is unloaded is 8,660 tonnes/day, this results in an estimated emission rate of approximately 104 kg/day of TSP and 35 kg/day of PM_{10} across the entire Project. Assuming that the material is dumped at 12 of the 24 laydown areas for the Project, the unmitigated emission rate per laydown area would be approximately 9 kg/day for TSP and 3 kg/day for PM_{10}. Further assuming that a 70 per cent reduction in emissions could be achieved through the use of water sprays at the point of unloading, the mitigated emission rate per laydown area would be reduced to 2.7 kg/day for TSP and 0.9 kg/day for PM_{10}.

- Uncontrolled emissions of dust from the movement of vehicles on unsealed roads has been estimated to generate emissions at a rate of 2.6 kg/vehicle kilometres travelled (VKT) for TSP and 0.72 kg/VKT for PM_{10}. Assuming that the transport capacity of the haul trucks used is 50 t/truck, the total weight of material generated is 8,660 t, and the total haul distance per truck is 2,400 km, the total VKT is estimated to be approximately 208 km/day. This results in an estimated emission rate of approximately 541 kg/day for TSP and 150 kg/day for PM_{10} across the entire Project. Assuming a 75 per cent reduction in emissions could be achieved through the application of water to the haul roads, the emission rates would be reduced to approximately 135.3 kg/day for TSP and 37.5 kg/day for PM_{10} across the entire Project.
- Emissions will also via wind erosion of exposed areas and stockpiles. Emission quantities for wind erosion cannot be accurately estimated at this time due to uncertainty regarding the total area of stockpiles and exposed earth. However, there are numerous industry standard mitigation measures available including wind breaks (30 per cent emission reduction), water sprays (50 per cent emission reduction) and enclosure (e.g. stockpile covers) (99 per cent emission reduction).

The impact of construction activity on sensitive receptors will be influenced by the source characteristics (e.g. emission rate, emission height, etc), the proximity of the receptor to construction dust sources, and local weather conditions at the time of the activity. The estimated emissions therefore cannot be used with any confidence to determine compliance at sensitive receptors. However, it is evident from the emission estimates that construction dust emissions can be significantly reduced through the implementation of mitigation measures.

The following sections outline the sensitivity of the AQIA study area to unmitigated construction dust impacts. The proposed mitigation measures and the assessed residual impacts with the implementation of the mitigation measures are discussed in Section 9.

6.1.4 Step 2B – Sensitivity of surrounding area

The IAQM methodology allows the sensitivity of an area to dust deposition, human health impacts due to PM_{10}, and ecological effects to be classified as high, medium, or low. The classifications are determined according to matrix tables provided in the IAQM guidance document. Individual matrix tables for dust deposition and human health impacts are provided in Table 6.3 and Table 6.4 respectively. Factors used in the matrix tables to determine the sensitivity of the surrounding area are described as follows:

- Receptor sensitivity (for individual receptors in the area):
  - High sensitivity – locations where members of the public are likely to be exposed for eight hours or more in a day. For example, private residences, hospitals, schools, or aged care homes.
  - Medium sensitivity – places of work where exposure is likely to be eight hours or more in a day.
  - Low sensitivity – locations where exposure is transient – i.e. one or two hours maximum. For example, parks, footpaths, shopping streets, playing fields.
- Ambient annual mean PM_{10} concentrations (only applicable to the human health impact matrix).
- Number of receptors in the area.
- Proximity of receptors to dust sources.

Table 6.3 details the IAQM guidance sensitivity levels from dust deposition effects on people and property. As detailed in Section 6.1.1 the total number of sensitive receptors within the AQIA study area considered for the construction phase is 2,828. Of these, 2,094 receptors are classified as high sensitivity as they are private places of residence, with the remaining receptors predominantly medium sensitivity. Of the 2,828 receptors, 1,435 are located within 350 m of a construction dust source; and 42 of the receptors are located less than 20 m away, with seven of these receptors located within the Project disturbance footprint.

Assessing the sensitivity level to dust deposition effects from the Project using the IAQM guidance the sensitivity is determined to be “High” as there are more than 10 receptors located within 20 m of active construction areas. However, the length of the Project is 28 km, including approximately 6 km in tunnel and the density of receptors near active construction areas is much less than a standard construction site in an urban area. Based on the land use of the AQIA study area a rating of “High” for sensitivity to dust deposition is considered overly conservative, and a rating of “Medium” is considered more appropriate. A rating of “Medium” has been used for the sensitivity of receptors to dust deposition impacts.

Table 6.3 IAQM assessment matrix for the determination of sensitivity to dust deposition impacts

Surrounding area sensitivity to dust deposition impacts					
Receptor sensitivity	**Number of receptors**	**Distance from the source (m)**			
		<20	**<50**	**<100**	**<350**
High	>100	High	High	Medium	Low
	10-100	High	Medium	Low	Low
	1-10	Medium	Low	Low	Low
Medium	>1	Medium	Low	Low	Low
Low	>1	Low	Low	Low	Low

A modified version of the IAQM guidance for assessing the sensitivity of an area to human health impacts is shown in Table 6.4. For high and medium sensitivity receptors, the IAQM methods takes the existing background concentrations of PM_{10} (as an annual average) experienced in the area of interest (e.g. AQIA study area). As the UK goals for PM_{10} differ from the ambient air quality goals adopted for use in this assessment (QLD air quality goals) the annual mean concentration categories used in the assessment have been modified from those presented in the IAQM method. This approach is consistent with the IAQM guidance, which notes that in using the tables to define the sensitivity of an area, professional judgement may be used to determine alternative sensitivity categories.

Table 6.4 IAQM assessment matrix for the determination of sensitivity to human health impacts

Receptor sensitivity	**Annual mean PM_{10} concentration[a]**	**Number of receptors**	**Distance from the source (m)**				
			<20	**<50**	**<100**	**<250**	**<350**
High	> 25 µg/m^3	> 100	High	High	High	Medium	Low
		10 to 100	High	High	Medium	Low	Low
		1 to 10	High	Medium	Low	Low	Low
	21 to 25 µg/m^3	> 100	High	High	Medium	Low	Low
		10 to 100	High	Medium	Low	Low	Low
		1 to 10	High	Medium	Low	Low	Low
	17 to 21 µg/m^3	> 100	High	Medium	Low	Low	Low
		10 to 100	High	Medium	Low	Low	Low
		1 to 10	Medium	Low	Low	Low	Low
	< 17 µg/m^3	> 100	Medium	Low	Low	Low	Low
		10 to 100	Low	Low	Low	Low	Low
		1 to 10	Low	Low	Low	Low	Low
Medium	> 25 µg/m^3	> 10	High	Medium	Low	Low	Low
		1 to 10	Medium	Low	Low	Low	Low
	21 to 25 µg/m^3	> 10	Medium	Low	Low	Low	Low
		1 to 10	Low	Low	Low	Low	Low
	17 to 21 µg/m^3	> 10	Low	Low	Low	Low	Low
		1 to 10	Low	Low	Low	Low	Low

Receptor sensitivity	Annual mean PM_{10} concentration[a]	Number of receptors	Distance from the source (m)				
			<20	<50	<100	<250	<350
	< 17 µg/m^3	> 10	Low	Low	Low	Low	Low
		1 to 10	Low	Low	Low	Low	Low
Low	Any	>1	Low	Low	Low	Low	Low

Table notes:

a The annual mean PM_{10} concentration categories have been modified from the IAQM guidance to adjust for assessment of a site in QLD.

As detailed in Section 4.4, the background annual average PM_{10} concentration at the Inland Rail AQMS at Gowrie was 17.1 µg/m^3. Table 6.4 provides the modified IAQM guidance sensitivity levels for human health impacts based on the receptor sensitivity and the annual mean PM_{10} concentration.

Assessing the sensitivity level to human health impacts using the IAQM guidance the sensitivity is determined to be "High" as there are between 10 to 100 receptors within 20 m of active construction areas, and the background concentration is greater than 17 µg/m^3.

Similar to the classification for sensitivity to dust deposition impacts, the determined sensitivity classification of "High" for human health impacts is considered to be conservative due to the length of the Project and the density of sensitive receptors near active construction areas. However, due to the importance of assessing human health, the sensitivity rating of "High" has been used for the assessment to provide a conservative assessment of impacts. The most sensitive areas to construction dust impacts will be residential areas in the several small townships or suburbs of Toowoomba located near the alignment, including Gowrie, Cranley, Mount Kynoch, Blue Mountain Heights, Lockyer, Postmans Ridge and Helidon Spa.

6.1.5 Step 2C – Unmitigated risks of impacts

The dust emission magnitudes for each activity as determined in Step 2A were combined with the sensitivity of the areas adjacent to the Project (in Table 6.3 and Table 6.4) to determine the risk of construction dust air quality impacts, with no mitigation applied. The risk of impacts for each activity is assessed according to the IAQM risk matrix methodology in Table 6.5. The "without mitigation" dust risk impacts for each activity are summarised in Table 6.6. No significant demolition is required for the Project and therefore the impact of demolition does not require assessment.

Table 6.5 IAQM risk matrix

Activity	Surrounding area sensitivity	Dust emission magnitude		
		Large	Medium	Small
Earthworks	High	High risk	Medium risk	Low risk
	Medium	Medium risk	Medium risk	Low risk
	Low	Low risk	Low risk	Negligible
Construction	High	High risk	Medium risk	Low risk
	Medium	Medium risk	Medium risk	Low risk
	Low	Low risk	Low risk	Negligible
Trackout	High	High risk	Medium risk	Low risk
	Medium	Medium risk	Low risk	Negligible
	Low	Low risk	Low risk	Negligible

Table 6.6 Without mitigation dust risk impacts for Project construction activities

Potential impact	Risk		
	Earthworks	Construction	Trackout
Scale of Activity (IAQM Table 4)	Large	Large	Large
Dust Deposition	Medium	Medium	Medium
Human Health	High	High	High

The result of the qualitative air quality risk assessment shows that the unmitigated air emissions from the construction of the Project poses a “High” risk of human health impacts but a “Medium” risk of impact from dust deposition.

6.1.6 Step 3 – Management strategies

The outcome of Step 2C is used to determine the level of management that is required to ensure that dust impacts on surrounding sensitive receptors are maintained at an acceptable level. A high or medium-level risk rating means that suitable management measures will need to be implemented during the Project.

A Construction Environmental Management Plan (CEMP) will be developed to mitigate and manage potential impacts during the construction. The implementation of approved site-specific and in-principle management measures, as listed in Section 9, should result in minimal risk of dust impacts on surrounding receptors.

6.1.7 Step 4 – Reassessment

The final step of the IAQM methodology is to determine whether there are significant residual impacts, post mitigation, arising from a proposed development. The guidance states:

> *For almost all construction activity, the aim should be to prevent significant effects on receptors through the use of effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be “not significant”.*

The dust risk assessment in Table 6.6 shows that without mitigation there is an anticipated high risk to human health, and a medium risk of impact from dust deposition as a result of earthworks, construction and trackout.

The construction dust sources associated with the Project are common emission sources. Industry standard mitigation measures to reduce dust emissions exist for all the identified sources and it is expected that emissions can be well managed through diligent implementation of these controls. In addition to mitigation at the source, visual monitoring of dust generation (visible plumes) and deposition on horizontal sources is an effective way to monitor the effectiveness of mitigation measures to ensure impacts to sensitive receptors are minimised.

It is anticipated that with effective mitigation of construction dust sources the residual impact on both dust deposition and human health will not be significant. Further discussion of mitigation measures and assessment of the residual impact with the implementation of mitigation is provided in Section 9.

6.2 Tank fuel storage

Fuel tank storage is proposed at five locations within the Project disturbance footprint during the construction of the Project. Fuel storage has the potential to impact nearby sensitive receptors due to the emission of VOCs and odour. Table 6.7 presents the proposed construction areas that will include diesel fuel storage, the volumes proposed to be stored, and the distance from each area to the closest identified sensitive receptor.

Table 6.7 Fuel tank storage locations

Construction area ID	Chainage (km)	Location	Maximum fuel storage proposed (L)	Distance from boundary of construction area to closest sensitive receptor (m)
G2H-LDN003.7	3.70	Gowrie Junction Road and Boundary Street, Gowrie Junction	40,000	60
G2H-LDN010.5	10.50	Wallens Road, Ballard	40,000	250
G2H-LDN011.9	11.90	Jones Road, Withcott	20,000	430
G2H-LDN018.8	18.80	Howmans Road, Lockyer	20,000	630
G2H-LDN025.1	25.10	Cattos Road, Helidon	20,000	350

Table 6.7 shows that for the largest fuel storage tanks of 40,000 L, the distance to the closest sensitive receptor, is between 60 m to 250 m, whilst for the smaller tanks of 20,000 L the distance to the closest sensitive receptor, is between 350 m to 630 m.

Vic EPA (2013) provides guidance on separation distances for the storage of petroleum products (100 m for floating roof tanks, and 250 m for fixed roof tanks), but this guidance is for tanks exceeding 2,000 t, which is far greater than the size of the tanks proposed for the Project.

The BCC AQPSP includes a Service Station Code (BCC 2014) which provides performance outcomes and acceptable outcomes for service stations to ensure that service station developments are located at "sufficient distance from dwellings to maintain residential amenity in adjoining, adjacent or surrounding areas". Acceptable Outcome AO7.2 specifies acceptable separation distances based on annual fuel throughput. For service stations with an annual fuel throughput of less than 1.2 megalitres (ML) the acceptable separation distance is 10 m, whilst for service stations with annual fuel throughput of between 1.2 to 9 ML, the accepted distance is 50 m. The Service Station Code specifically excludes diesel from the definition of fuel, however, diesel is less volatile than petrol and other motor spirits and therefore the application of these buffers is considered conservative for diesel.

To exceed an annual throughput of 9 ML, the 20,000 L tanks would need to be refilled more than once per day (450 times per year), whilst the 40,000 L tanks would need to be refilled more than once every two days (225 times per year). It is considered improbable that this volume of diesel will be consumed, and it is expected that annual fuel throughput at each location identified in Table 6.7 will be considerably less than 9 ML.

All construction areas have a separation distance from the nearest boundary to the closest receptor of greater than 50 m and therefore an acceptable separation distance can be achieved for fuel storage at each laydown area.

If the location or size of laydown areas is revised as the Project design progresses, it is proposed that at minimum fuel tanks will be located at least 50 m from the nearest sensitive receptor, but separation distances will be maximised as far as practical within site restrictions. A minimum separation distance of 50 m and compliance with Australian Standard AS 1940:2017 The storage and handling of flammable and combustible liquids (Australian Standards 2017) is expected to result in negligible impacts to sensitive receptors based on the recommendations of the BCC AQPSP Service Station Code.

6.3 Crushing plant

Onsite crushing and screening for the processing of structural fill may be required to be undertaken at two laydown areas: the laydown area at Gowrie Junction Road and Boundary Street (G2H-LDN003.7); and the existing Toowoomba Second Range Crossing laydown area at McNamaras Road (G2H-LDN015.6). The exact model of crushing plant proposed is not known at this time. Crushing would generate dust emissions and these emissions have the potential to impact sensitive receptors.

Recommended separation distances for industrial residual air emissions (Vic EPA 2013) provides guidance on suitable separations distances between mining and extractive activities and neighbouring sensitive receptors, including for crushing. Table 6.8 presents the recommended separation distances for crushing associated with different mining and extractive activities.

Table 6.8 Separation distances for crushing associated with mining and extractive industries

Mining or extractive operation	Type of activity	Recommended separation distance (m)
Open cut coal mine	Harvesting, crushing, screening, stockpiling and conveying of coal	1,000
Mine for other minerals	Crushing, screening, stockpiling and conveying of other minerals	250
Quarry	Quarrying, crushing, screening, stockpiling and conveying of rock	250 (without blasting) 500 (with blasting or with respirable crystalline silica)

Source: Vic EPA 2013

Based on the material anticipated to require processing, the separation distance of 250 m for quarries (without blasting) is considered the most appropriate for the proposed crushing and screening activities associated with the Project.

The nearest sensitive receptor to the McNamaras Road (G2H-LDN015.6) laydown area is approximately 500 m to the north, which is further than the recommended separation distance of 250 m. The nearest sensitive receptor to the Gowrie Junction Road and Boundary Street (G2H-LDN003.7) laydown area is located approximately 60 m to the north of the laydown area boundary, which is within the recommended separation distance of 250 m.

The Gowrie Junction Road and Boundary Street (G2H-LDN003.7) laydown area is triangular in shape and covers an area of approximately 338,000 m^2, and therefore the location of crushing and screening plant could be located at a position inside the laydown area which is further than 250 m from the nearest sensitive receptor.

It is proposed that at minimum crushing and screening plant will be located at least 250 m from the nearest sensitive receptor, but separation distances will be maximised as far as practical within site restrictions. With a minimum separation distance of 250 m, emissions from crushing and screening are anticipated to have minimal impact on air quality at sensitive receptors in the AQIA study area.

6.4 Blasting

Cuttings in the existing ground profile will have to be made where the final design level is lower than the surrounding land. Non-rippable rock (rock that is not able to be broken down using mechanical means) will be broken via drill and blast or by hydraulic rock-breakers. Significant volumes of non-rippable rock are anticipated within some of the cuttings along the Project alignment, particularly through the Toowoomba Range. The extent to which drilling and blasting will be required is subject to further geotechnical investigation. Based on the preliminary geotechnical information, it is anticipated that blasting may be required in the more significant cuttings, for example, near the western tunnel portal and the eastern tunnel portal.

Blasting would generate dust emissions and these emissions have the potential to impact sensitive receptors.

Recommended separation distances for industrial residual air emissions (Vic EPA 2013) includes a recommended separation distance of 500 m for quarries which undertake blasting.

If blasting is required to construct the Toowoomba Range tunnel, dust emissions from blasting would not impact sensitive receptors as they would occur underground. Blasting at other major cuttings along the alignment may also impact sensitive receptors, subject to the exact locations where blasting is required and the separation to sensitive receptors.

In accordance with the ARTC Approved Mitigation Measures (ARTC, Inland Rail Programme Environmental Management Plan 2018), to minimise the risk of impact to sensitive receptors it is proposed that blasting is not undertaken at locations if the prevailing wind conditions are likely to transport dust emissions toward the nearest sensitive receptors if these receptors are within 500 m of the blasting location.

There are two sensitive receptors within 500 m of the western tunnel portal, with a total of 11 receptors within 700 m of the portal (allowing for blasting 100m either side of the location of the tunnel portal). Of these 11 receptors near the western tunnel portal, four are within the Project disturbance footprint. At the eastern tunnel portal there are no receptors within 500 m, but one receptor is located within 700 m (570 m to the north), with this receptor located outside the Project disturbance footprint.

Where drilling and blasting is to be undertaken, the construction contractor will develop a Blasting Management Plan which will detail the adoption of appropriate and safe mitigation measures and be approved by DTMR prior works commencing.

6.5 Concrete batching

A concrete batching plant may be located at the laydown area at the western tunnel portal (G2H-LDN010.5) to facilitate construction of the Project.

It is expected that only concrete required at the western tunnel portal will come from the proposed concrete batch plant/precast facility. Concrete used for the construction of the intermediate tunnel ventilation shaft and the eastern tunnel portal is expected to come from existing suppliers in Toowoomba.

Guidance on recommended separation distances between concrete batching plants and sensitive receptors is provided in the following State government guidance documents:

- Guideline: Recommended separation distances for industrial residual air emissions (Vic EPA 2013)
- Evaluation distances for effective air quality and noise management (SA EPA 2016)
- Guidance for the assessment of environmental factors: separation distances between industrial and sensitive land uses (WA EPA 2005).

The recommended separation distances are summarised in Table 6.9.

Table 6.9 Recommended separation distances for concrete batching plants

Industrial activity	Recommended separation distance (m)	Source
Production of concrete	100	Vic EPA
Concrete batching works	200	SA EPA
Concrete batching plant or cement products (bricks) manufacturing	300-500 (depending on size)	WA EPA

The nearest receptor to the laydown area near the western tunnel portal (G2H-LDN010.5) is located approximately 250 m to the north. The dimensions of the laydown area are approximate 150 m by 400 m, and therefore there is significant space within the laydown area to further increase this separation distance.

Based on the recommended separation distances presented in Table 6.9, it is expected that if required, the concrete batching plant can be located in a position which does not present significant risk of impacts to air quality at sensitive receptors.

6.6 Welding

A flash butt weld (FBW) facility will be required to facilitate the welding of short (27.5 m) rail into long welded rail, approximately 400 m in length. A FBW facility is currently planned for the Gowrie area, near Draper Road, with the final location to be confirmed during detailed design. Emissions from welding are not considered significant and have not been assessed further.

6.7 Sewage treatment

Portable toilet facilities will be located along the Project alignment during construction for workers. A suitably qualified contractor will be engaged for the removal and transport of the sewage to an approved off-site treatment facility. Portable toilet facilities are not considered significant odour sources for the purposes of this assessment and therefore have not been assessed any further.

7 Operational air quality impact assessment

This section presents the results of the assessment impacts to air quality and tank water quality from the operational phase of the Project. The assessment of impacts from the operational phase has been undertaken considering forecast train movements for the year 2040.

Air emissions from the commissioning phase of the Project are expected to be insignificant and are considered unlikely to generate nuisance or risk exceedance of the Projects air quality goals and therefore have not been assessed in any further detail.

7.1 Human receptors

7.1.1 Modelled results

The results of the modelling of typical and peak operational impacts are presented in this section. The results are itemised in the increments described below in Table 7.1.

Table 7.1 Modelling increment descriptions

Increments	Description
Project only contribution	Represents the predicted contribution from modelled Project emissions, including emissions from the Project alignment, the crossing loops and the Toowoomba Range tunnel portals.
With veneering	The predicted contribution from modelled Project emissions with the inclusion of veneering to laden coal trains (75 per cent reduction to emissions from coal wagons) (only applicable for TSP, PM_{10}, $PM_{2.5}$ and deposited dust)
Without veneering	The predicted contribution from modelled Project emissions without veneering (no reduction to coal wagon emissions) (only applicable for TSP, PM_{10}, $PM_{2.5}$ and deposited dust). Although it is expected that all coal trains operating on Inland Rail will utilise veneering, modelling of emissions from coal trains without the inclusion of veneering has been undertaken to investigate the potential for air quality impacts without this mitigation measure applied.
Background concentration	Adopted background concentrations and existing emissions sources as per Section 4.4
Total cumulative concentration	The cumulative concentration of the Project contribution, the adopted background concentration and non-project contributions (from the B2G and H2C projects, QR West Moreton System rail corridor and the Toowoomba Bypass)

The results of the dispersion modelling are shown in Table 7.2 and Table 7.3 for the peak and typical train volume scenarios respectively, with the air quality goals for each pollutant also presented.

Modelled results are presented in Table 7.2 and Table 7.3 for the worst affected receptor within the Projects' permanent disturbance footprint, and the worst affected receptor outside the Projects' permanent disturbance footprint.

There are six sensitive receptors located in the permanent disturbance footprint (receptors R_386, R_447, R_888, R_898, R_923 and R_931). The worst affected receptor within the Projects' permanent disturbance footprint is receptor R_898; which is the worst affected receptor for each pollutant and averaging period. The worst affected receptor outside the Projects' permanent disturbance footprint varies depending on the pollutant and averaging period being assessed.

Receptor R_898 is located 360 m north west of the western tunnel portal of the Toowoomba Range tunnel and adjacent to the crossing loop near the western tunnel portal. Receptor R_898 is located approximately 20 m from the nearest modelled crossing loop idling locomotive point source. The location of receptor R_898 is shown in the concentration contour plots which are discussed in Section 7.1.2.

The results for receptor R_898 from Table 7.2 and Table 7.3 are summarised as follows:

- Predicted cumulative 1 hour NO_2 concentrations exceed the air quality goal for both the peak and typical scenarios.

- With veneering, predicted cumulative 24 hour maximum $PM_{2.5}$ and annual average $PM_{2.5}$ concentrations exceed the relevant air quality goals for both the peak and typical scenarios.
- Without veneering, predicted cumulative 24 hour maximum PM_{10}, 24 hour maximum $PM_{2.5}$ and annual average $PM_{2.5}$ concentrations exceed the relevant air quality goals for both the peak and typical scenarios.
- Predicted concentration and dust deposition levels at R_898 are compliant for all other pollutant species for the peak and typical scenarios.

Receptor R_898 is a residential dwelling located within the permanent disturbance footprint of the Project. It is expected all sensitive receptors within the permanent disturbance footprint of the Project will be acquired pursuant to the land acquisition process. As such, it is expected that during operations a residential dwelling will not exist at the location represented by receptor R_898, or other receptors located within the permanent disturbance footprint. It is noted predicted cumulative concentrations and dust deposition levels at the other five sensitive receptors located in the permanent disturbance footprint (receptors R_386, R_447, R_888, R_923 and R_931), are compliant with the relevant air quality goals for all pollutant species for both the typical and peak traffic volume scenarios (both with and without veneering).

Table 7.2 and Table 7.3 show that predicted cumulative concentrations and dust deposition levels at the worst affected receptor outside the permanent disturbance footprint are compliant with the relevant air quality goals for all pollutant species for both the typical and peak traffic volume scenarios (both with and without veneering).

The air quality goals adopted for the assessment are prescribed to protect the environmental values of health and wellbeing and protecting the aesthetic environment. Assessment of the Projects impact to these environmental values is discussed in the following sections.

Modelled results for PM_{10}, $PM_{2.5}$ and NO_2 for every receptor for the peak train volume scenario and without the inclusion of veneering are presented in Appendix E. Appendix B provides additional detailed figures for the sensitive receptors included in the modelling.

Table 7.2 Predicted ground level concentrations at the worst affected sensitive receptors within and outside the permanent disturbance footprint for peak operations

Pollutant	Averaging period	Receptor[a]	Highest predicted ground level pollutant concentration at identified sensitive receptor locations (µg/m³)				Air quality goal (µg/m³)
			Project only contribution (A)	Background concentration (B)	Project + Background (A + B)	Total Cumulative Concentration (A + B + Non-Project Sources)	
TSP	Annual average (with veneering)	R_898	5.1	42.75	47.9	48.1	90
		R_2591	2.2		44.9	45.0	
	Annual average (without veneering)	R_898	9.5		52.2	52.3	
		R_2591	7.7		50.5	50.6	
PM_{10}	24 hour maximum (with veneering)	R_898	31.8	17.4	49.2	49.2	50
		R_821	5.6		23.0	23.1	
	24 hour maximum (without veneering)	R_898	35.3		**52.7**	**52.7**	
		R_224	13.2		30.6	30.7	
	Annual average (with veneering)	R_898	4.3	17.1	21.4	21.5	25
		R_2591	1.2		18.3	18.4	
	Annual average (without veneering)	R_898	6.5		23.6	23.7	
		R_2591	4.0		21.1	21.2	
$PM_{2.5}$	24 hour maximum (with veneering)	R_898	29.7	7.6	**37.3**	**37.3**	25
		R_821	5.1		12.7	12.7	
	24 hour maximum (without veneering)	R_898	30.2		**37.8**	**37.9**	
		R_821	5.2		12.8	12.8	
	Annual average (with veneering)	R_898	3.5	6.5	**10.0**	**10.1**	8
		R_2548	0.4		6.9	7.3	
	Annual average (without veneering)	R_898	3.9		**10.4**	**10.4**	
		R_2591	0.8		7.3	7.4	
Deposited dust	30 day (with veneering)	R_898	1.7	50	51.7	51.7	120 mg/m²/day[b]
		R_2591	0.1		50.1	50.1	
	30 day (without veneering)	R_898	1.9		51.9	51.9	
		R_2591	0.2		50.2	50.2	

Pollutant	Averaging period	Receptor[a]	Highest predicted ground level pollutant concentration at identified sensitive receptor locations (µg/m^3)				Air quality goal (µg/m^3)
			Project only contribution (A)	Background concentration (B)	Project + Background (A + B)	Total Cumulative Concentration (A + B + Non-Project Sources)	
NO_2	1 hour maximum	R_898	227.4	57.5[c]	**284.9**	**286.6**	250
		R_397	109.4		166.9	171.9	
	Annual average	R_898	45.0	7.8[c]	52.8	53.9	62
		R_2548	5.6		13.4	23.6	
Arsenic and compounds	Annual average	R_898	1.02×10^{-4}	- [d]	1.02×10^{-4}	1.02×10^{-4}	6 ng/m^3
		R_2591	2.90×10^{-5}		2.90×10^{-5}	2.90×10^{-5}	
Cadmium and compounds	Annual average	R_898	7.13×10^{-3}	- [d]	7.13×10^{-3}	7.13×10^{-3}	5 ng/m^3
		R_2591	2.03×10^{-3}		2.03×10^{-3}	2.03×10^{-3}	
Chromium III and compounds	1 hour maximum	R_898	4.64×10^{-4}	- [d]	4.64×10^{-4}	4.64×10^{-4}	9
		R_821	1.52×10^{-4}		1.52×10^{-4}	1.52×10^{-4}	
Chromium VI and compounds	1 hour maximum	R_898	4.64×10^{-4}	- [d]	4.64×10^{-4}	4.64×10^{-4}	0.1
		R_821	1.52×10^{-4}		1.52×10^{-4}	1.52×10^{-4}	
	Annual average	R_898	3.36×10^{-5}	- [d]	3.36×10^{-5}	3.36×10^{-5}	0.01
		R_2591	9.59×10^{-6}		9.59×10^{-6}	9.59×10^{-6}	
Lead and compounds	Annual average	R_898	2.12×10^{-7}	- [d]	2.12×10^{-7}	2.12×10^{-7}	0.5
		R_2591	8.94×10^{-8}		8.94×10^{-8}	8.94×10^{-8}	
Nickel and compounds	Annual average	R_898	4.69×10^{-2}	- [d]	4.69×10^{-2}	4.69×10^{-2}	22 ng/m^3
		R_2591	1.34×10^{-2}		1.34×10^{-2}	1.34×10^{-2}	
Dioxins and furans	Annual average	R_898	2.99×10^{-12}	- [d]	2.99×10^{-12}	2.99×10^{-12}	3×10^{-08}
		R_2548	1.70×10^{-13}		1.70×10^{-13}	1.70×10^{-13}	
Polycyclic aromatic hydrocarbon (as benzo[a]pyrene)	Annual average	R_898	9.14×10^{-2}	- [d]	9.14×10^{-2}	9.14×10^{-2}	0.3 ng/m^3
		R_2548	5.19×10^{-3}		5.19×10^{-3}	5.19 x 10-3	
1,3-butadiene	Annual average	R_898	1.14	- [d]	1.1	1.1	2.4
		R_2548	6.49×10^{-2}		0.1	0.1	

Pollutant	Averaging period	Receptor[a]	Highest predicted ground level pollutant concentration at identified sensitive receptor locations (µg/m^3)				Air quality goal (µg/m^3)
			Project only contribution (A)	Background concentration (B)	Project + Background (A + B)	Total Cumulative Concentration (A + B + Non-Project Sources)	
Benzene	Annual average	R_898	1.07×10^{-2}	5.2	5.2	5.2	5.4
		R_2548	6.06×10^{-4}		5.2	5.2	
Toluene	30 minute maximum[e]	R_898	2.84×10^{-2}	23.0	23.0	23.0	1100
		R_821	8.63×10^{-3}		23.0	23.0	
	24 hour maximum	R_898	1.34×10^{-2}	21.7	21.7	21.7	4100
		R_821	2.26×10^{-3}		21.7	21.7	
	Annual average	R_898	1.52×10^{-3}	18.5	18.5	18.5	400
		R_2548	8.66×10^{-5}		18.5	18.5	
Xylenes	24 hour maximum	R_898	1.85	37.6	39.4	39.4	1100
		R_821	3.11×10^{-1}		37.9	37.9	
	Annual average	R_898	2.10×10^{-1}	33.8	34.0	34.0	950
		R_2548	1.19×10^{-2}		33.8	33.8	

Table notes:

Results in **bold** exceed the relevant air quality goal

a. Results are presented for the worst affected receptor within the permanent disturbance footprint, and the worst affected receptor outside the permanent disturbance footprint. The first row (receptor R_898) presents the modelled result for the worst affected receptor within the permanent disturbance footprint, with the second row presenting the modelled result for the worst affected receptor outside the permanent disturbance footprint
b. Air quality goal of 120 mg/m^2/day, calculated based on the average deposition over a period of one month
c. Concentrations of NO_2 have been predicted using the US EPA's OLM and the hourly background concentrations as measured at the DES Mutdapilly monitoring site in 2013. The background concentrations presented in the table have not been used specifically in the assessment but are included to provide an indication of background concentrations and the Project contribution. To provide an indication of the Project contribution, this value has been calculated by subtracting the background concentration from the predicted cumulative concentration.
d. No background monitoring data available for modelled pollutant
e. 30-minute maximum calculated from 1 hour modelling results as per (Turner 1970)

Table 7.3 Predicted ground level concentrations at the worst affected sensitive receptors within and outside the permanent disturbance footprint for typical operations

Pollutant	Averaging period	Receptor[a]	Highest predicted ground level pollutant concentration at identified sensitive receptor locations (µg/m^3)				Air quality goal (µg/m^3)
			Project only contribution (A)	Background concentration (B)	Project + Background (A + B)	Total Cumulative Concentration (A + B + Non-Project Sources)	
TSP	Annual average (with veneering)	R_898	4.8	42.75	47.6	47.7	90
		R_2591	1.8		44.5	44.6	
	Annual average (without veneering)	R_898	8.4		51.1	51.2	
		R_2591	6.3		49.1	49.2	
PM_{10}	24 hour maximum (with veneering)	R_898	31.5	17.4	48.9	48.9	50
		R_821	5.5		22.9	23.0	
	24 hour maximum (without veneering)	R_898	34.3		**51.7**	**51.8**	
		R_224	10.8		28.2	28.3	
	Annual average (with veneering)	R_898	4.1	17.1	21.2	21.3	25
		R_2591	1.0		18.1	18.2	
	Annual average (without veneering)	R_898	5.9		23.0	23.1	
		R_2591	3.3		20.4	20.4	
$PM_{2.5}$	24 hour maximum (with veneering)	R_898	29.6	7.6	**37.2**	**37.2**	25
		R_821	5.0		12.6	12.6	
	24 hour maximum (without veneering)	R_898	30.0		**37.6**	**37.7**	
		R_821	5.2		12.8	12.8	
	Annual average (with veneering)	R_898	3.5	6.5	**10.0**	**10.0**	8
		R_2548	0.3		6.8	7.3	
	Annual average (without veneering)	R_898	3.7		**10.2**	**10.3**	
		R_2548	0.7		7.2	7.3	
Deposited dust	30 day (with veneering)	R_898	1.6	50	51.6	51.6	120 mg/m^2/day[b]
		R_2591	0.1		50.1	50.1	
	30 day (without veneering)	R_898	1.8		51.8	51.8	
		R_2591	0.2		50.2	50.2	

Pollutant	Averaging period	Receptor[a]	Highest predicted ground level pollutant concentration at identified sensitive receptor locations (µg/m^3)				Air quality goal (µg/m^3)
			Project only contribution (A)	Background concentration (B)	Project + Background (A + B)	Total Cumulative Concentration (A + B + Non-Project Sources)	
NO_2	1 hour maximum	R_898	226.8	57.5[c]	**284.3**	**286.6**	250
		R_397	109.4		166.9	171.9	
	Annual average	R_898	44.8	7.8[c]	52.6	53.7	62
		R_2548	5.3		13.1	23.5	
Arsenic and compounds	Annual average	R_898	9.78×10^{-5}	- [d]	9.78×10^{-5}	9.78×10^{-5}	6 ng/m^3
		R_2591	2.37×10^{-5}		2.37×10^{-5}	2.37×10^{-5}	
Cadmium and compounds	Annual average	R_898	6.84×10^{-3}	- [d]	6.84×10^{-3}	6.84×10^{-3}	5 ng/m^3
		R_2591	1.66×10^{-3}		1.66×10^{-3}	1.66×10^{-3}	
Chromium III and compounds	1 hour maximum	R_898	4.58×10^{-4}	- [d]	4.58×10^{-4}	4.58×10^{-4}	9
		R_821	1.48×10^{-4}		1.48×10^{-4}	1.48×10^{-4}	
Chromium VI and compounds	1 hour maximum	R_898	4.58×10^{-4}	- [d]	4.58×10^{-4}	4.58×10^{-4}	0.1
		R_821	1.48×10^{-4}		1.48×10^{-4}	1.48×10^{-4}	
	Annual average	R_898	3.23×10^{-5}	- [d]	3.23×10^{-5}	3.23×10^{-5}	0.01
		R_2591	7.82×10^{-6}		7.82×10^{-6}	7.82×10^{-6}	
Lead and compounds	Annual average	R_898	1.99×10^{-7}	- [d]	1.99×10^{-7}	1.99×10^{-7}	0.5
		R_2591	7.29×10^{-8}		7.29×10^{-8}	7.29×10^{-8}	
Nickel and compounds	Annual average	R_898	4.50×10^{-2}	- [d]	4.50 x 10-2	4.50×10^{-2}	22 ng/m^3
		R_2591	1.09×10^{-2}		1.09 x 10-2	1.09×10^{-2}	
Dioxins and furans	Annual average	R_898	2.96×10^{-12}	- [d]	2.96 x 10-12	2.96×10^{-12}	3×10^{-08}
		R_2548	1.60×10^{-13}		1.60 x 10-13	1.60×10^{-13}	
Polycyclic aromatic hydrocarbon (as benzo[a]pyrene)	Annual average	R_898	9.07×10^{-2}	- [d]	9.07 x 10-2	9.07×10^{-2}	0.3 ng/m^3
		R_2548	4.91×10^{-3}		4.91 x 10-3	4.91×10^{-3}	
1,3-butadiene	Annual average	R_898	1.1	- [d]	1.1	1.1	2.4
		R_2548	6.14×10^{-2}		6.14×10^{-2}	0.1	

Pollutant	Averaging period	Receptor[a]	Highest predicted ground level pollutant concentration at identified sensitive receptor locations (µg/m^3)				Air quality goal (µg/m^3)
			Project only contribution (A)	Background concentration (B)	Project + Background (A + B)	Total Cumulative Concentration (A + B + Non-Project Sources)	
Benzene	Annual average	R_898	1.06×10^{-2}	5.2	5.2	5.2	5.4
		R_2548	5.73×10^{-4}		5.2	5.2	
Toluene	30 minute maximum[e]	R_898	2.84×10^{-2}	23.0	23.0	23.0	1100
		R_821	8.61×10^{-3}		23.0	23.0	
	24 hour maximum	R_898	1.34×10^{-2}	21.7	21.7	21.7	4100
		R_821	2.25×10^{-3}		21.7	21.7	
	Annual average	R_898	1.51×10^{-3}	18.5	18.5	18.5	400
		R_2548	8.18×10^{-5}		18.5	18.5	
Xylenes	24 hour maximum	R_898	1.84	37.6	39.4	39.4	1100
		R_821	3.11×10^{-1}		37.9	37.9	
	Annual average	R_898	2.09×10^{-1}	33.8	34.0	34.0	950
		R_2548	1.13×10^{-2}		33.8	33.8	

Table notes:

Results in **bold** exceed the relevant air quality goal

a. Results are presented for the worst affected receptor within the permanent disturbance footprint, and the worst affected receptor outside the permanent disturbance footprint. The first row (receptor R_898) presents the modelled result for the worst affected receptor within the permanent disturbance footprint, with the second row presenting the modelled result for the worst affected receptor outside the permanent disturbance footprint

b. Air quality goal of 120 mg/m^2/day, calculated based on the average deposition over a period of one month

c. Concentrations of NO_2 have been predicted using the US EPA's OLM and the hourly background concentrations as measured at the DES Mutdapilly monitoring site in 2013. The background concentrations presented in the table have not been used specifically in the assessment but are included to provide an indication of background concentrations and the Project contribution. To provide an indication of the Project contribution, this value has been calculated by subtracting the background concentration from the predicted cumulative concentration.

d. No background monitoring data available for modelled pollutant

e. 30-minute maximum calculated from 1 hour modelling results as per (Turner 1970)

7.1.2 Concentration contour plots

Predicted cumulative concentration contour plots for the peak train volume scenario for PM_{10} (maximum 24 hour concentration), $PM_{2.5}$ (annual average concentration) and NO_2 (1 hour maximum concentration) are shown in Figure 7.1, Figure 7.2 and Figure 7.3 respectively. Predicted cumulative pollutant concentration contours for the same pollutants for the typical train volume scenario are presented in Figure 7.4, Figure 7.5 and Figure 7.6 respectively. The concentration contours are cumulative and therefore can be compared directly against the Project air quality goals as defined in Section 3.6.

The concentration contour plots show the predicted cumulative ground level concentration (as contour lines) across the AQIA study area. The contour plots show that ground level concentrations decrease with increased distance from the Project alignment.

The contour plots also show the influence of the crossing loops on pollutant concentrations, with peak concentrations predicted near each of the crossing loops. The contour plots also show elevated concentrations near the eastern and western portals of the Toowoomba Range tunnel, with elevated concentrations predicted near the tunnel portals due to emissions from the crossing loops and the tunnel portals. It is noted that the crossing loops are the dominant source of emissions, and have a greater impact on the concentration contours than emissions from the tunnel portals. This is due to the quantity of air which is purged from the tunnel and the dilution which this provides for emissions from the tunnel portals.

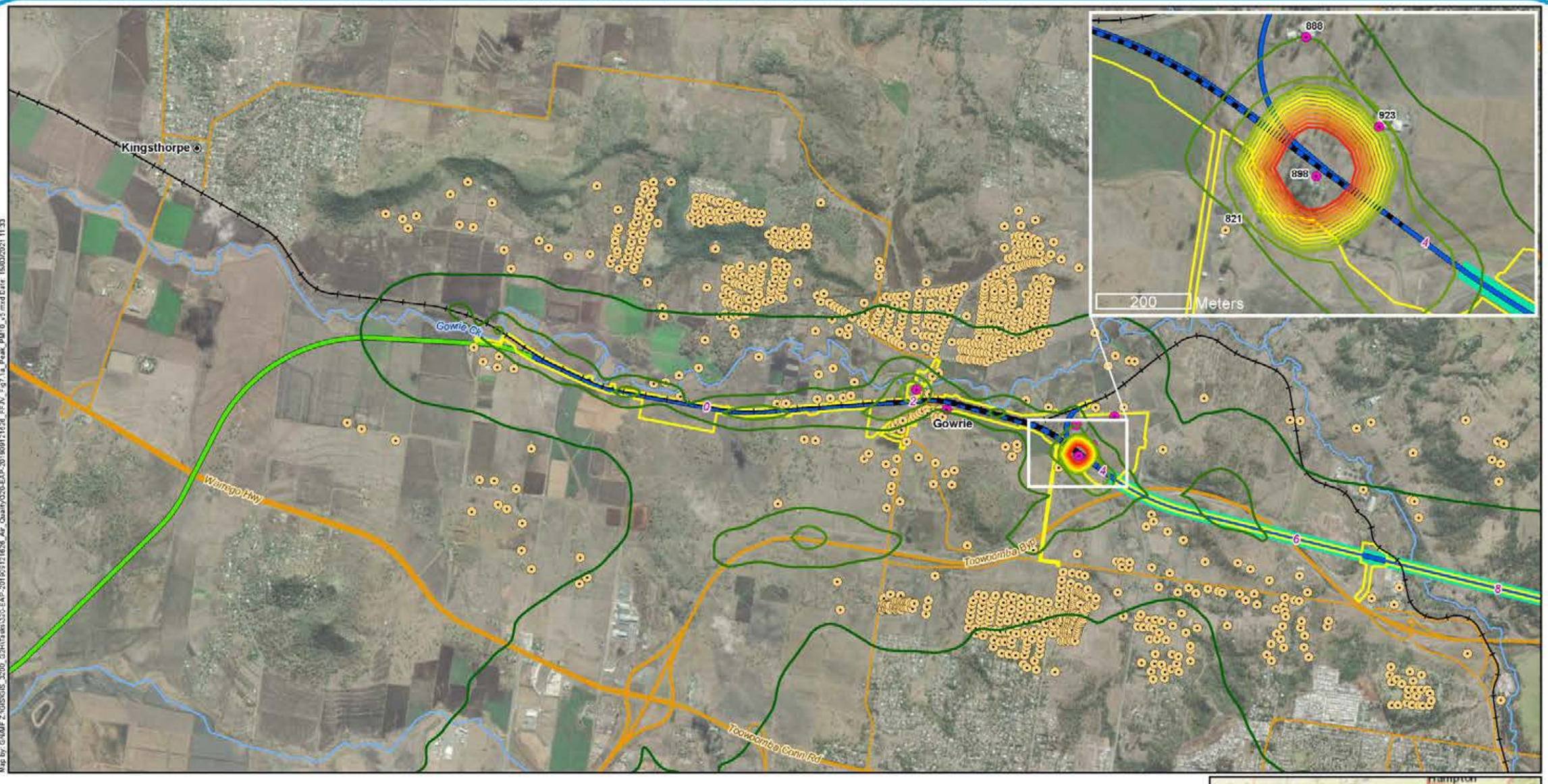
It is noted that the shape of the concentration contours near the crossing loops and tunnel portals is influenced by the averaging period presented (e.g. 1 hour, 24 hour or annual average) and the topography near the tunnel portals.

Modelling of the Project alignment and the crossing loops has included the design elevations for each element. The concentration contours presented in Figure 7.1 to Figure 7.6 are presented at ground level (0 m above ground), as per the requirements of the EP Act Air Guideline and as required to assess the impact at sensitive receptors. At locations where the design elevation for the Project is above ground level, predicted concentrations at ground level are lower due to the enhanced dispersion which occurs between emission release point and the point at which the plume reaches the ground.

The location of the worst affected receptor, R_898, is shown in each of the concentration contour plots. Receptor R_898 is located near the western tunnel portal and adjacent the crossing loop. Figure 7.1 to Figure 7.6 illustrate that peak concentrations occur at R_898 and the surrounding area to this receptor. Receptor R_898 is a residential dwelling located within the permanent disturbance footprint of the Project and it is expected that this residential dwelling will be acquired if the Project progresses pursuant to the land acquisition process. As such, it is expected that during operations a residential dwelling will not exist at the location represented by receptor R_898.

In addition to the concentration contours presented in Figure 7.1 to Figure 7.6, predicted cumulative annual average NO_2 concentration contours are presented in Section 7.3 for the assessment of impacts to ecological receptors. The concentration contours presented in Section 7.3 (Figure 7.7and Figure 7.8 respectively) can be used to review predicted annual average NO_2 concentrations at all sensitive receptors, including ecological receptors and residential dwellings. Predicted annual average NO_2 concentrations are below the air quality goal (62 µg/m^3) for human health and wellbeing at all modelled discrete receptors for both the peak and typical train volume scenarios (refer Table 7.2 and Table 7.3 respectively).

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GNMF Z:\GIS\GIS_3200_G2H\Tasks\3200-EAP-20190912\626_FFJV_Fig7.1a_Peak_PM10_v5.mxd Date: 15/03/2021 11:33

Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative maximum PM_{10} 24 hour average ($\mu g/m^3$) ($50\ \mu g/m^3$ goal)

18 20 22 24 28 30 32 34 36 38 40 42 44 46 48



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

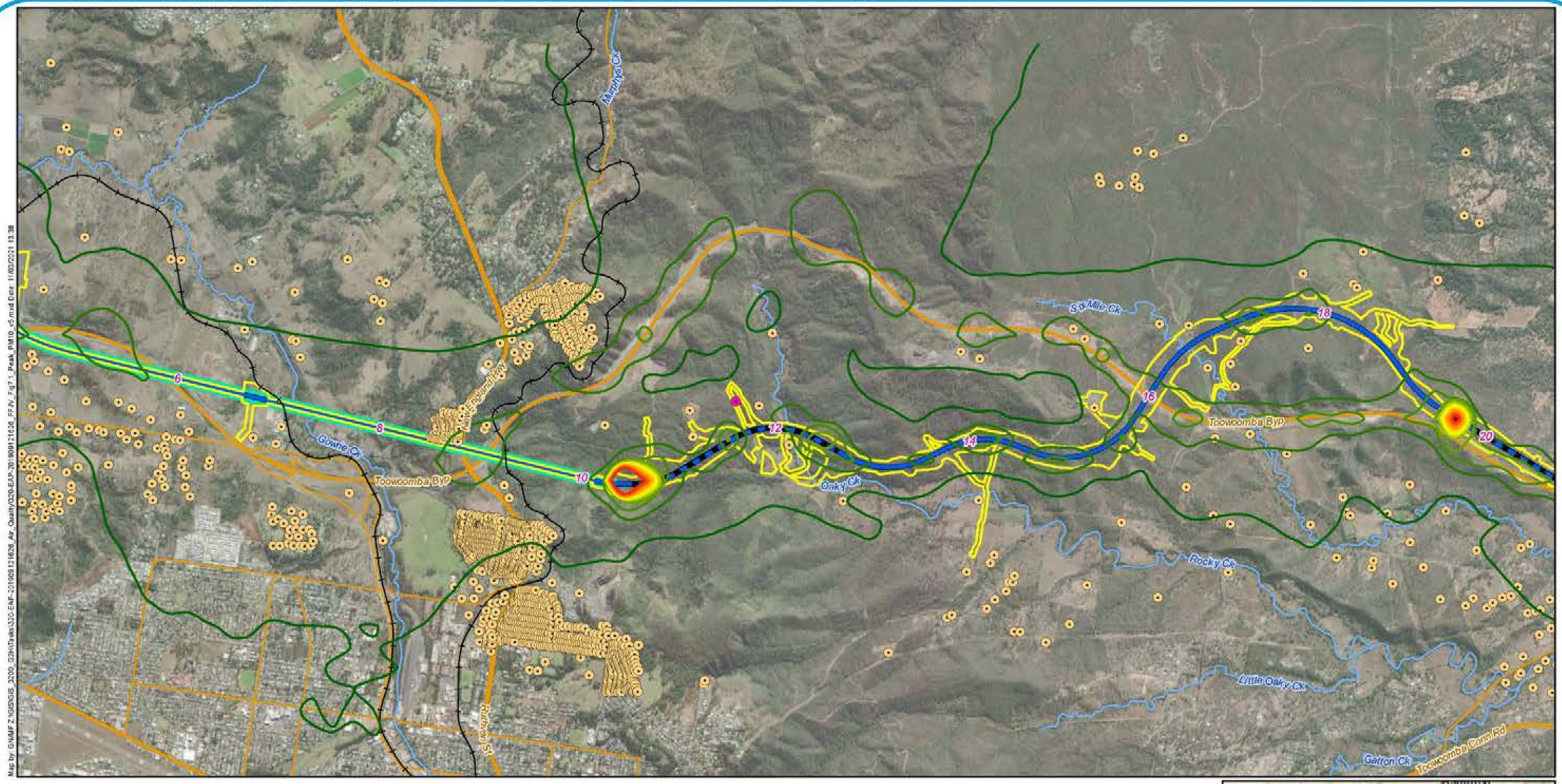
Future Freight
Integrating Community, Environment and Engineering

Issue date: 15/03/2021 Version: 4
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.1a: Peak scenario predicted cumulative maximum PM_{10} 24 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GHMF Z:\GIS\GIS_3200_G2H\Tables\320-EAP-20190912162\6_FFIV_Fig7.1_Peak_PM10_v5.mxd Date: 11/03/2021 13:38

Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative maximum PM_{10} 24 hour average ($\mu g/m^3$) ($50\ \mu g/m^3$ goal)

18 20 22 24 28 30 32 34 36 38 40 42 44 46 48



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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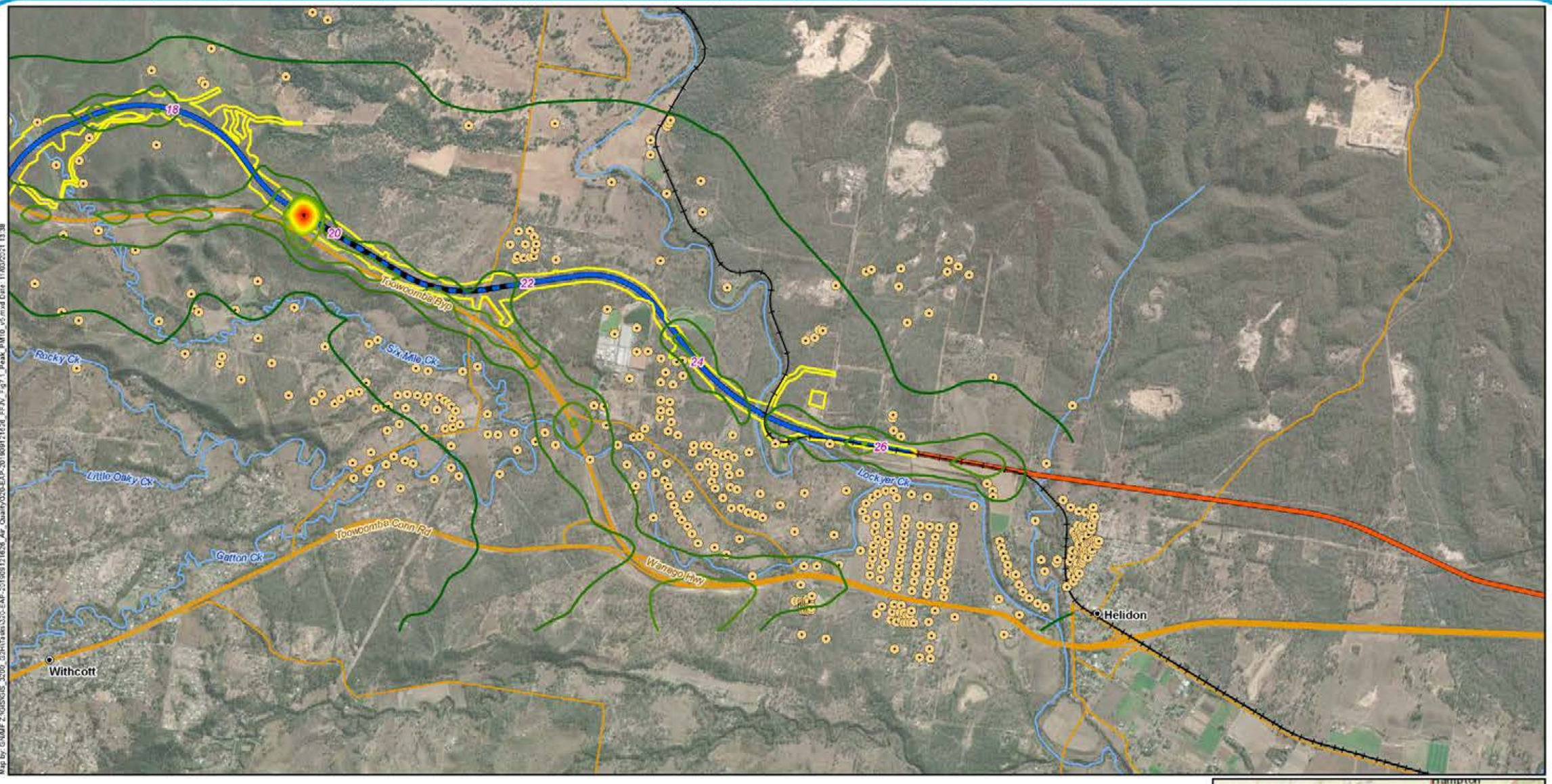
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.1b: Peak scenario predicted cumulative maximum PM_{10} 24 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GNMF Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190912\626_Air_Quality\320-EAP-20190912\626_FFIV_Fig7.1_Peak_PM10_v5.mxd Date: 11/03/2021 13:38

Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative maximum PM_{10} 24 hour average ($\mu g/m^3$) ($50\ \mu g/m^3$ goal)

18 — 20 — 22 — 24 — 28 — 30 — 32 — 34 — 36 — 38 — 40 — 42 — 44 — 46 — 48



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5 km

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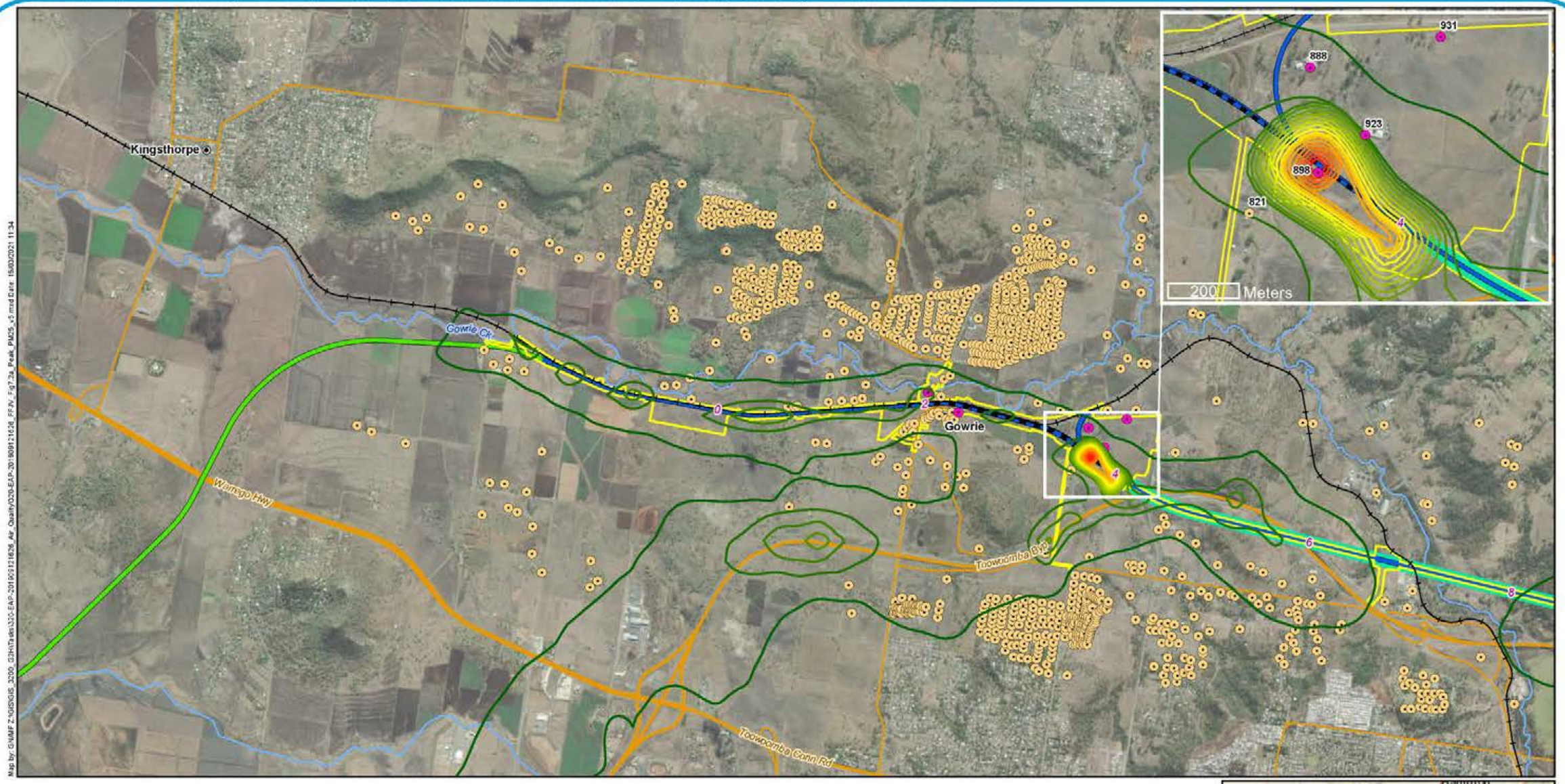
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.1c: Peak scenario predicted cumulative maximum PM_{10} 24 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GWMF Z:\GIS\GIS_3200_G2H\Tasks\330-EAP-20190912\626_Air_Quality\020-EAP-20190912\626_FFIV_Fig7.2a_Peak_PM25_v5.mxd Date: 15/03/2021 11:34

Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative $PM_{2.5}$ annual average ($\mu g/m^3$) (8 $\mu g/m^3$ goal)

6.6 — 7.6 — 8.6 — 9.4
6.8 — 7.8 — 8.7 — 9.6
7 — 8 — 8.8 — 9.8
7.2 — 8.2 — 9 — 10
7.4 — 8.4 — 9.2



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

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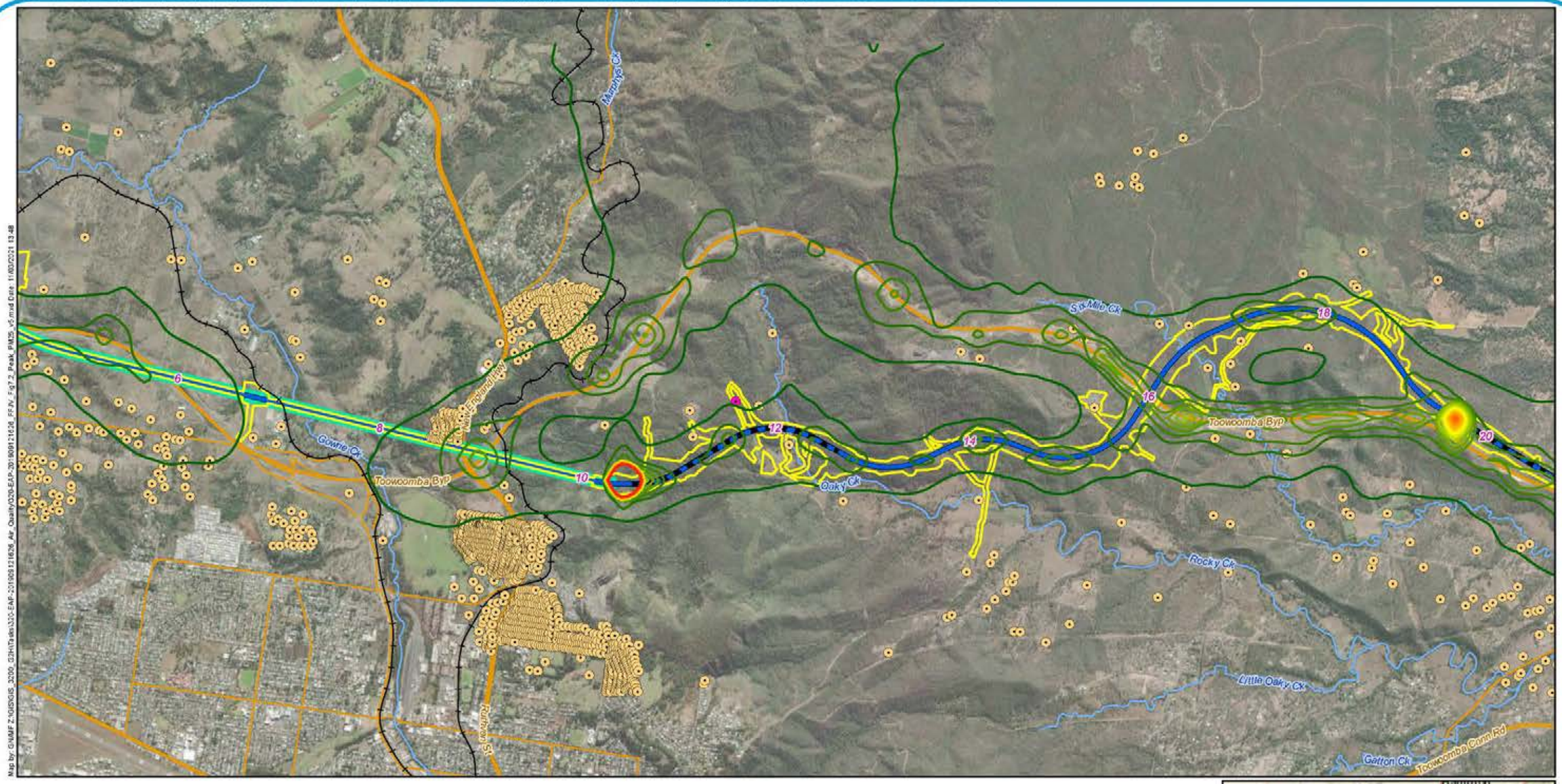
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.2a: Peak scenario predicted cumulative $PM_{2.5}$ annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GNMF Z:\GIS\GIS_3200_G2H\Tables\320-EAP-20190912\626_FFIV_Fig7.2_Peak_PM25_v5.mxd Date: 11/03/2021 13:48

Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative $PM_{2.5}$ annual average ($\mu g/m^3$) (8 $\mu g/m^3$ goal)

6.6 7.6 8.6 9.4
6.8 7.8 8.7 9.6
7 8 8.8 9.8
7.2 8.2 9 10
7.4 8.4 9.2



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.2b: Peak scenario predicted cumulative $PM_{2.5}$ annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Map by: GNMF Z:\GIS\GIS_3200_G2H\Tasks\320-EAF-20190912\626_Air_Quality\320-EAF-20190912\626_FFIV_Fig7.2_Peak_PM25_v5.mxd Date: 11/03/2021 13:48

Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative $PM_{2.5}$ annual average ($\mu g/m^3$) ($8\ \mu g/m^3$ goal)

6.6 — 6.8 — 7 — 7.2 — 7.4 — 7.6 — 7.8 — 8 — 8.2 — 8.4 — 8.6 — 8.7 — 8.8 — 9 — 9.2 — 9.4 — 9.6



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5 km

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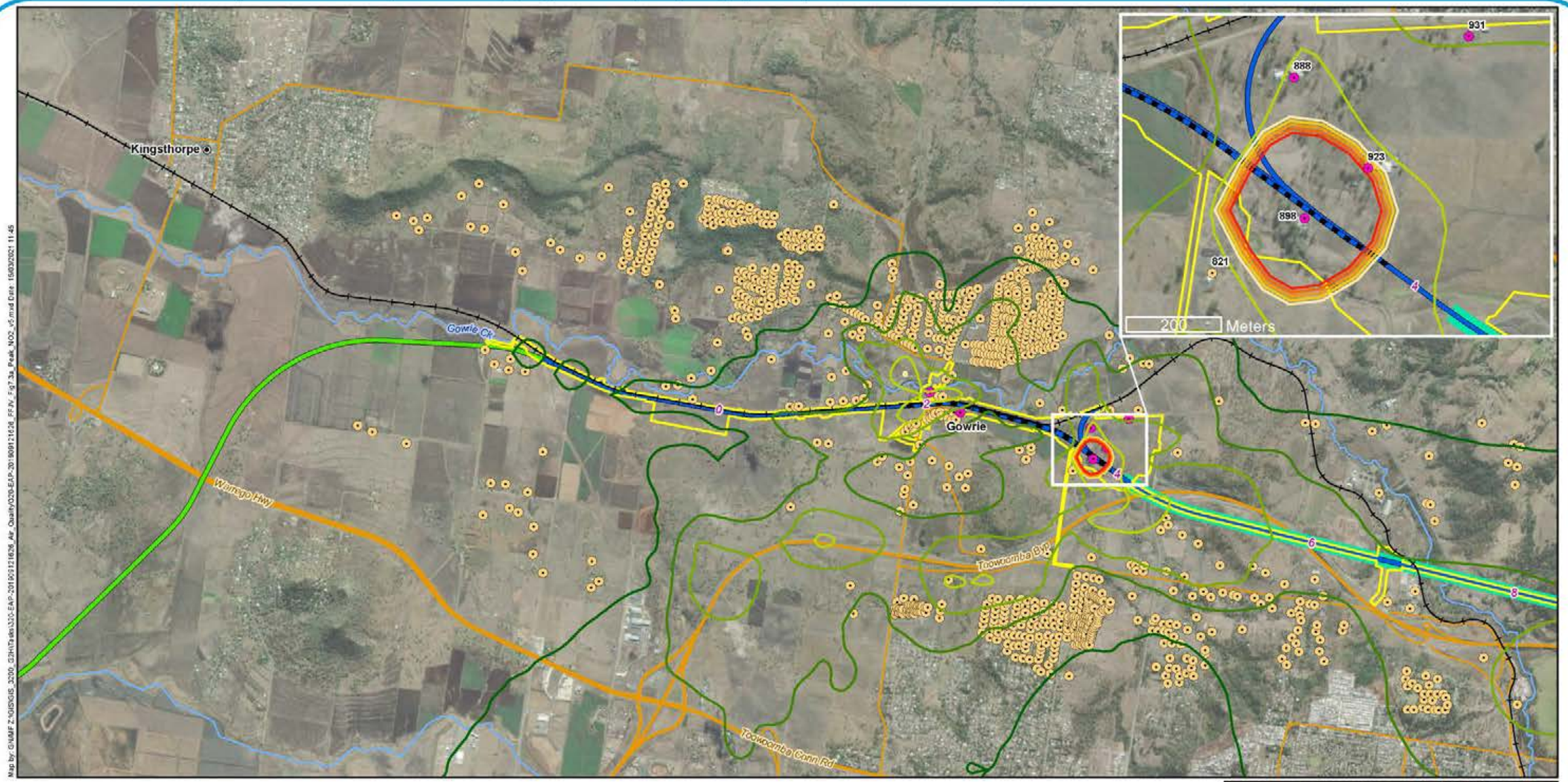
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.2c: Peak scenario predicted cumulative $PM_{2.5}$ annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative NO_2 maximum 1 hour average ($\mu g/m^3$) (250 $\mu g/m^3$ goal)

75, 100, 125, 150, 175, 200, 225, 250, 275

A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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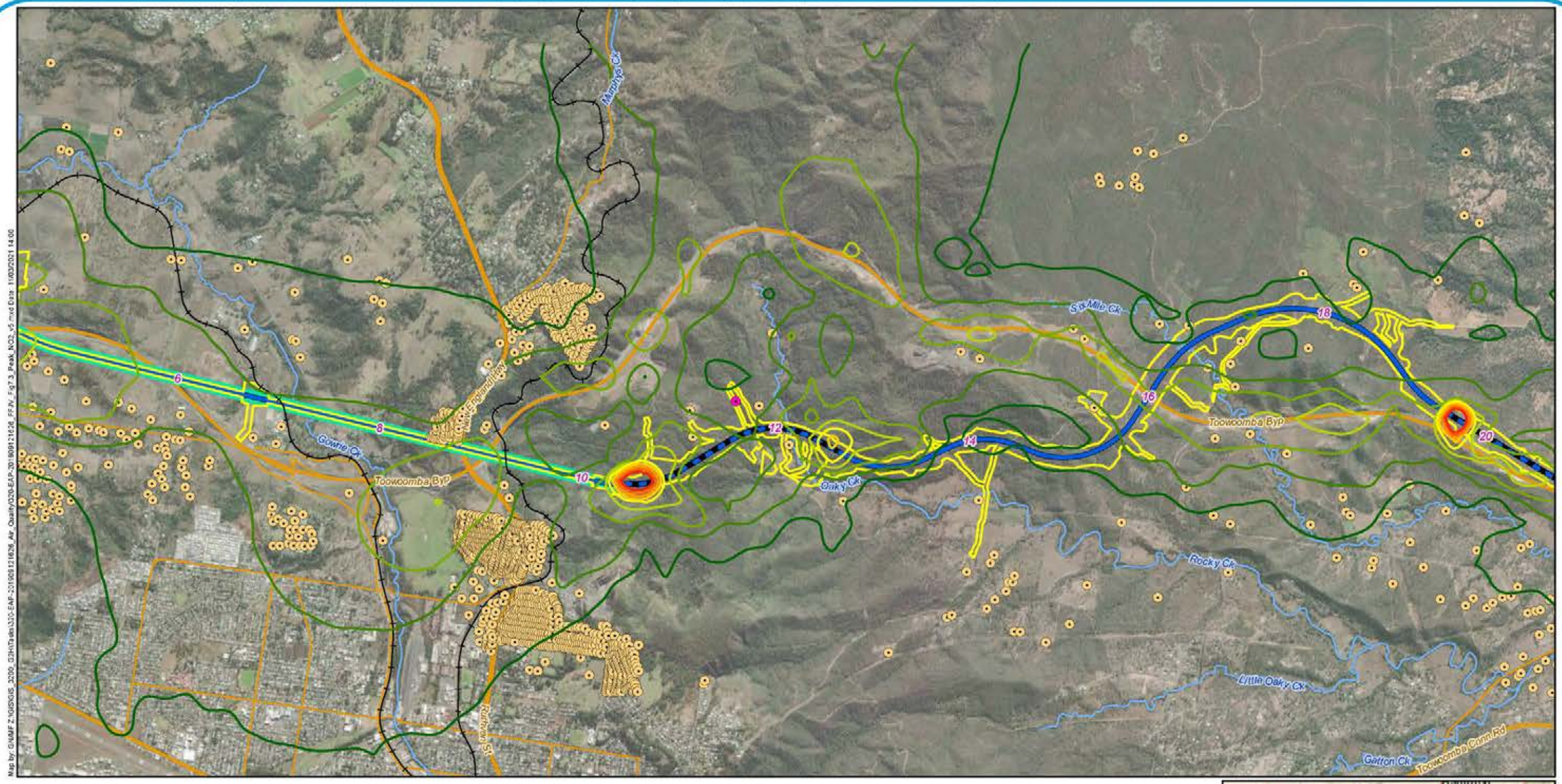
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.3a: Peak scenario predicted cumulative NO_2 maximum 1 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative NO_2 maximum 1 hour average ($\mu g/m^3$) (250 $\mu g/m^3$ goal)

- 75
- 100
- 125
- 150
- 175
- 200
- 225
- 250
- 275



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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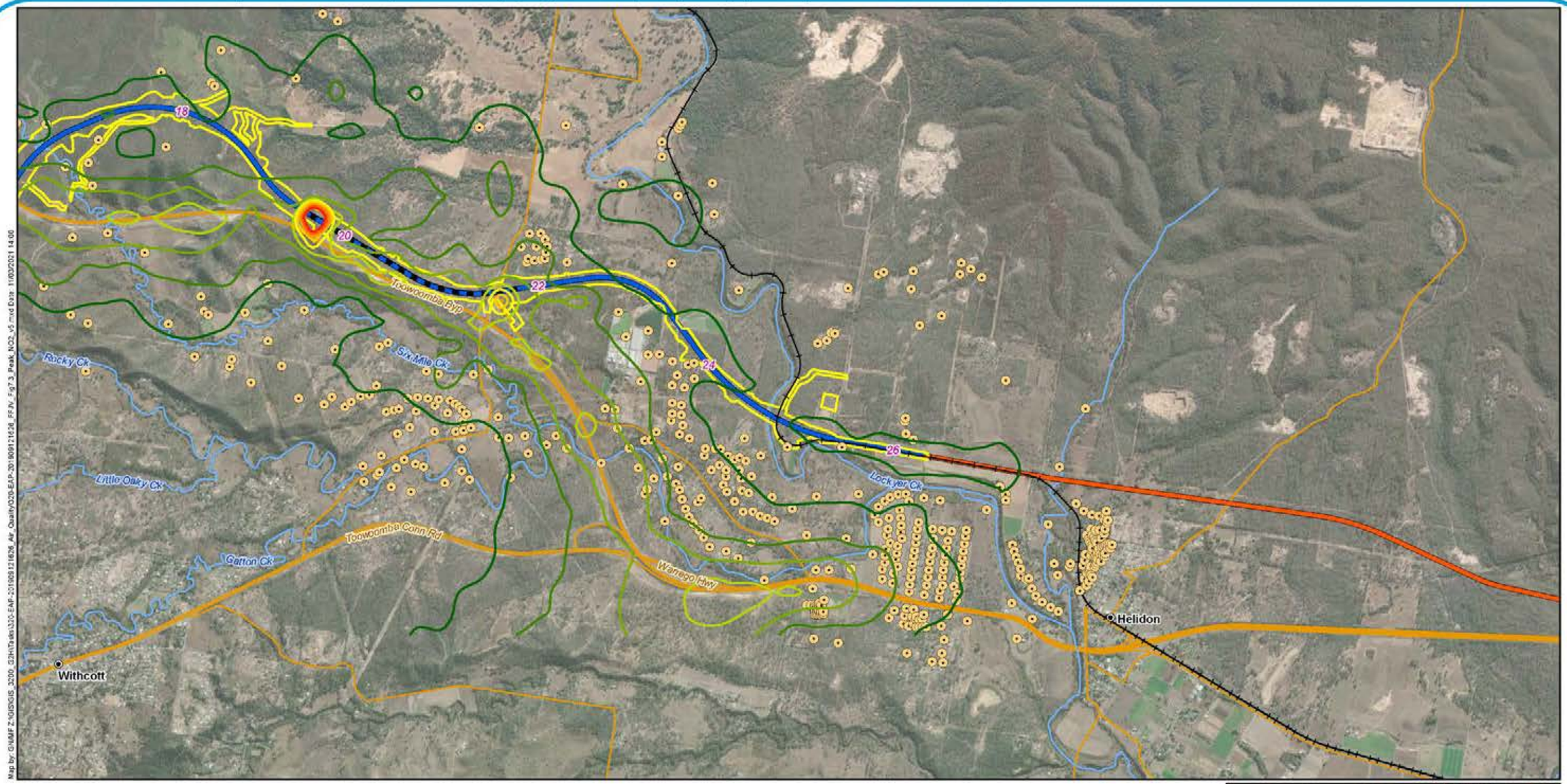
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.3b: Peak scenario predicted cumulative NO_2 maximum 1 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GWMF Z:\GIS\GIS_3200_G2H\Tasks\300-EAP-20190912\626_Air_Quality\020-EAP-20190912\626_FFIV_Fig7.3_Peak_NO2_v5.mxd Date: 11/03/2021 14:06

Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative NO_2 maximum 1 hour average ($\mu g/m^3$) (250 $\mu g/m^3$ goal)

- 75
- 100
- 125
- 150
- 175
- 200
- 225
- 250
- 275



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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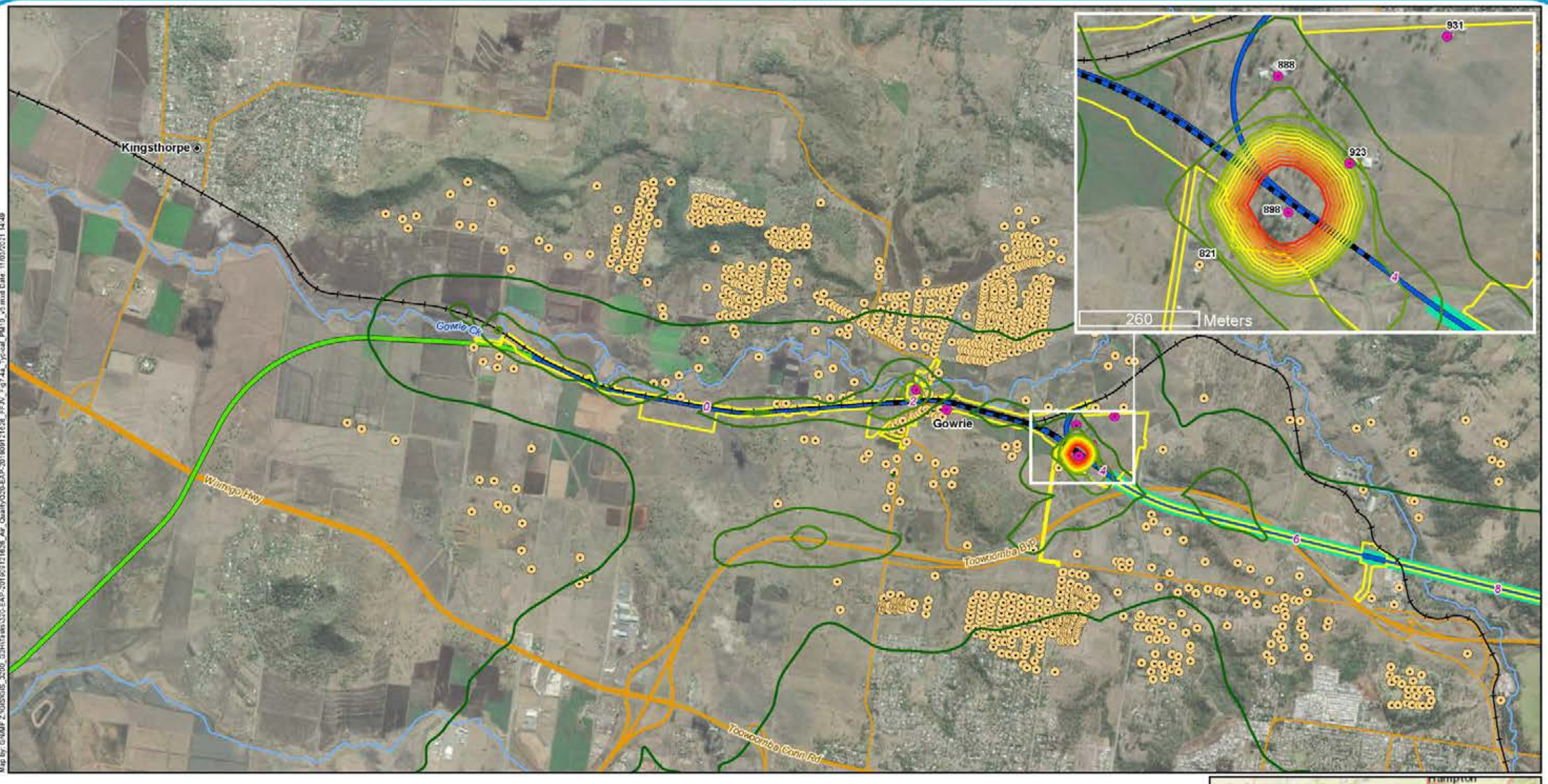
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.3c: Peak scenario predicted cumulative NO_2 maximum 1 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative maximum PM_{10} 24 hour average ($\mu g/m^3$) ($50\ \mu g/m^3$ goal)

18 20 22 24 28 30 32 34 36 38 40 42 44 46 48

A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

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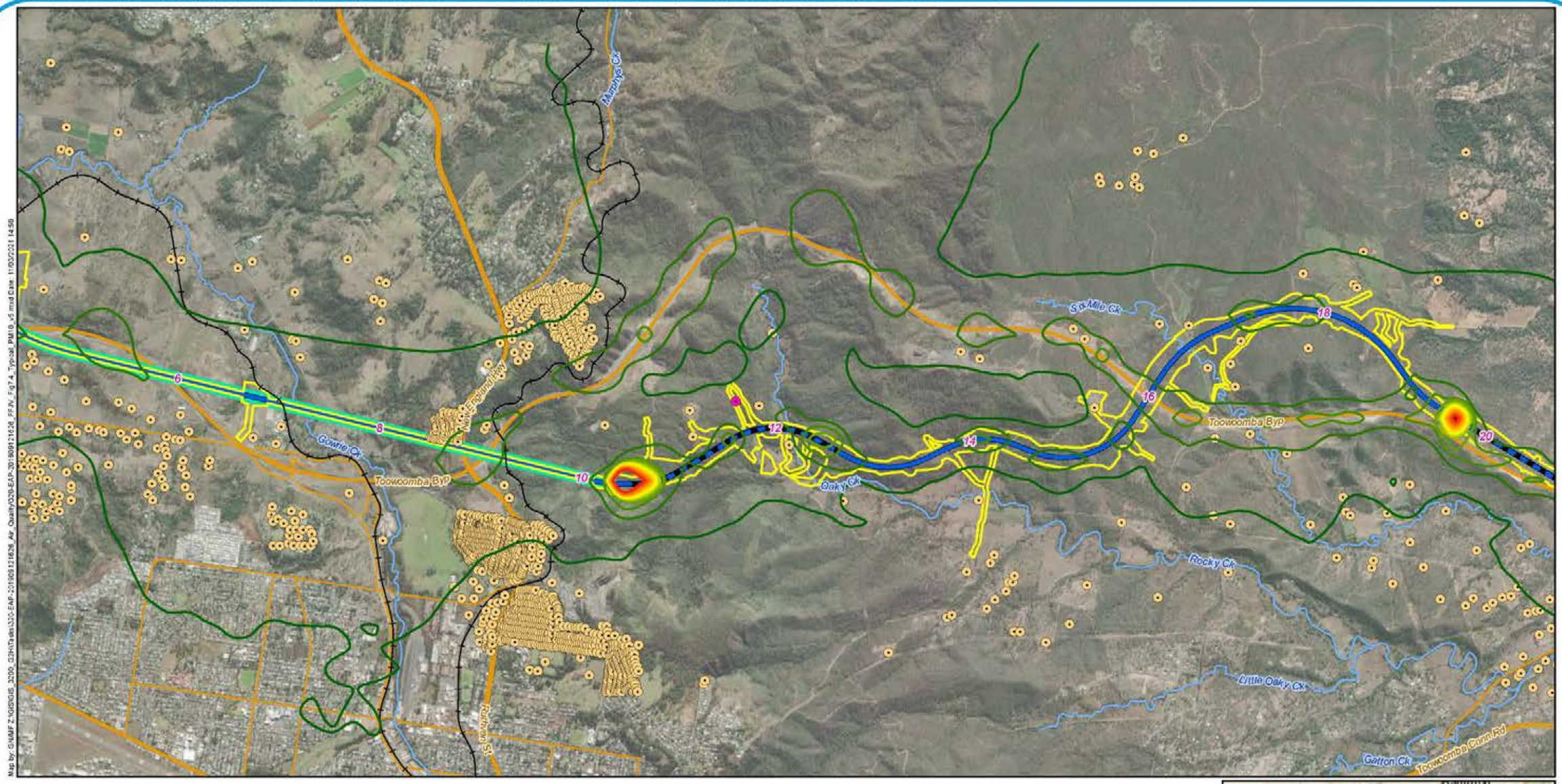
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.4a: Typical scenario predicted cumulative maximum PM_{10} 24 hour average ground level concentrations

Map by: G:\MAP Z:\GIS\GIS_3200_G2H\Tasks\3200-EAP-20190912\1626_Air_Quality\020-EAP-20190912\1626_FFIV_Fig7.4a_Typical_PM10_v5.mxd Date: 11/03/2021 14:49

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

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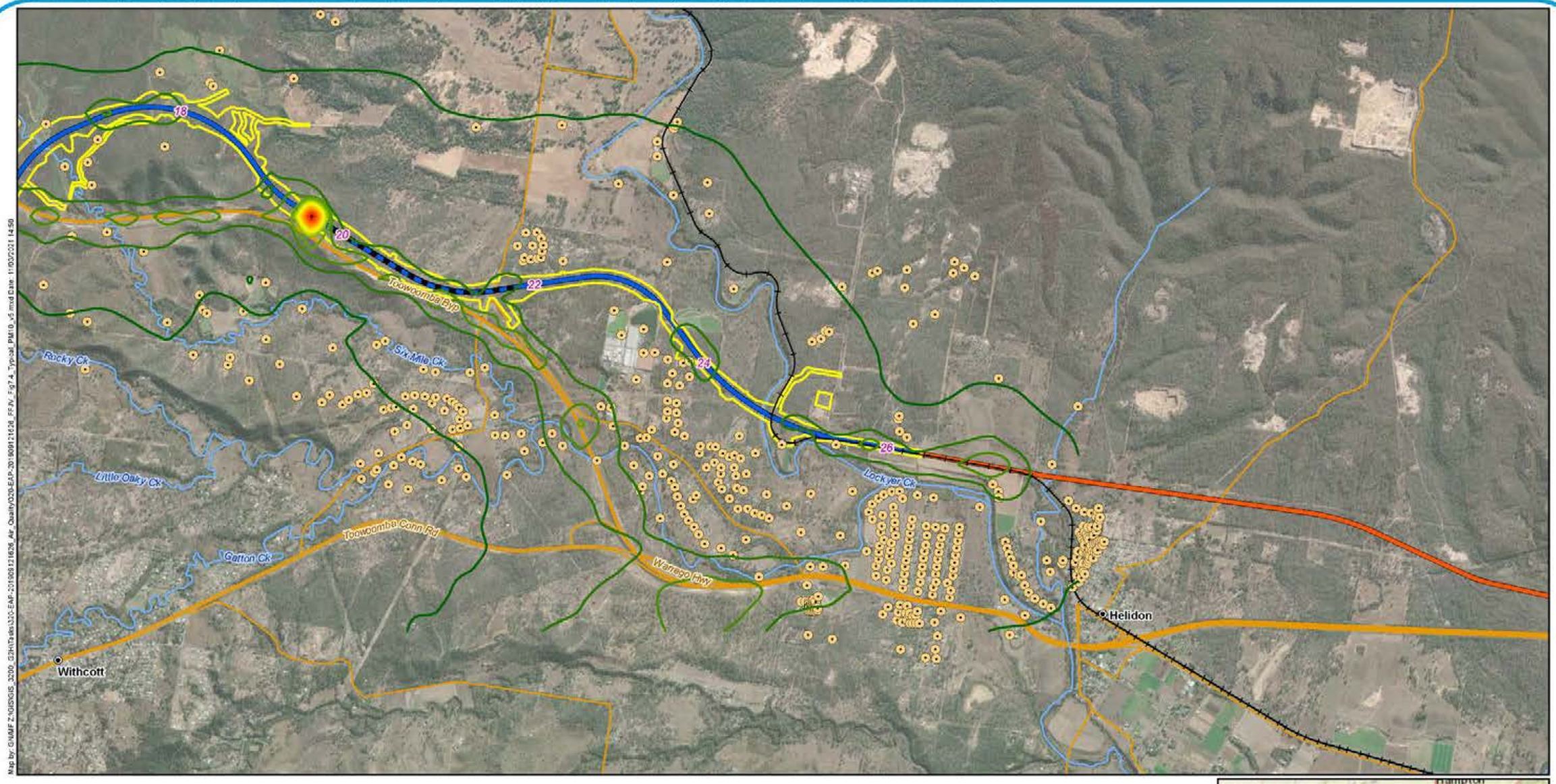
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.4b: Typical scenario predicted cumulative maximum PM_{10} 24 hour average ground level concentrations

Map by: GHMF Z:\GIS\GIS_3200_G2H\Tables\320-EAP-20190912162\6_Air_Quality\320-EAP-20190912162\6_FFIV_Fig7.4_Typical_PM10_v5.mxd Date: 11/03/2021 14:59

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative maximum PM_{10} 24 hour average ($\mu g/m^3$) ($50\ \mu g/m^3$ goal)

18 — 20 — 22 — 24 — 28 — 30 — 32 — 34 — 36 — 38 — 40 — 42 — 44 — 46 — 48



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5 km

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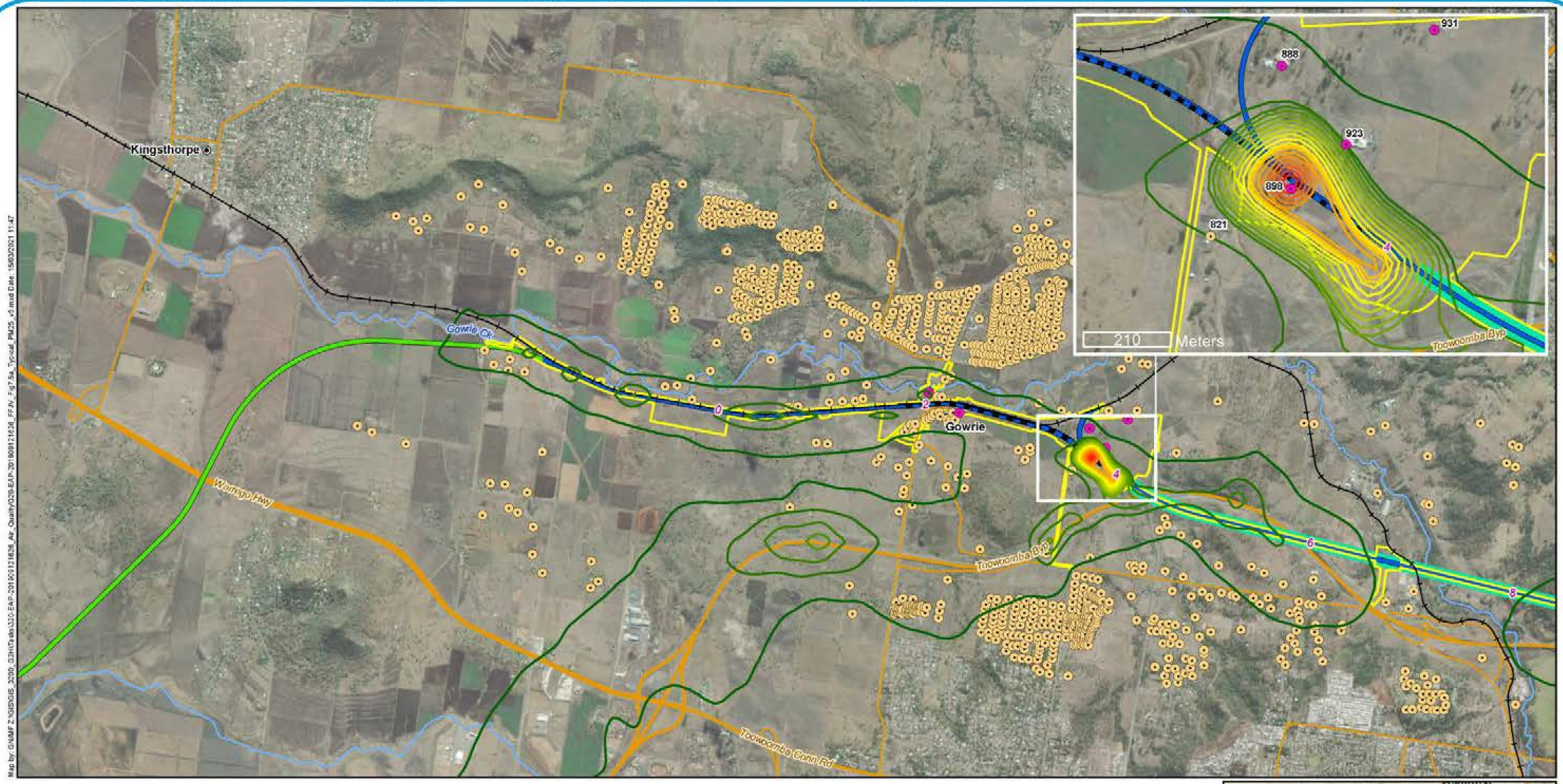
Gowrie to Helidon

Figure 7.4c: Typical scenario predicted cumulative maximum PM_{10} 24 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative $PM_{2.5}$ annual average ($\mu g/m^3$) (8 $\mu g/m^3$ goal)

6.6	7.6	8.6	9.4
6.8	7.8	8.7	9.6
7	8	8.8	9.8
7.2	8.2	9	10
7.4	8.4	9.2	



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

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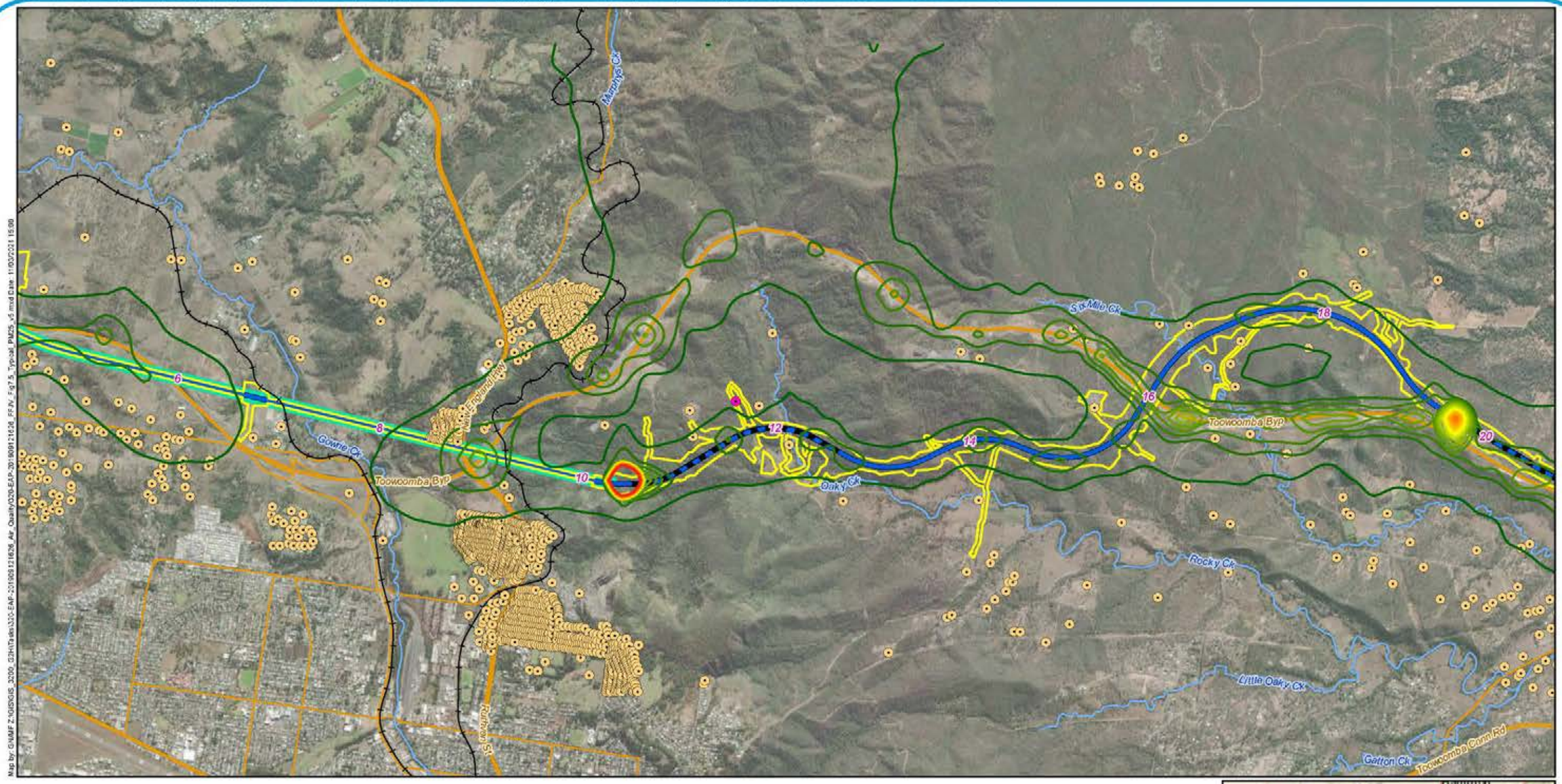
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.5a: Typical scenario predicted cumulative $PM_{2.5}$ annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative $PM_{2.5}$ annual average ($\mu g/m^3$) (8 $\mu g/m^3$ goal)

6.6 7.6 8.6 9.4
6.8 7.8 8.7 9.6
7 8 8.8 9.8
7.2 8.2 9 10
7.4 8.4 9.2



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

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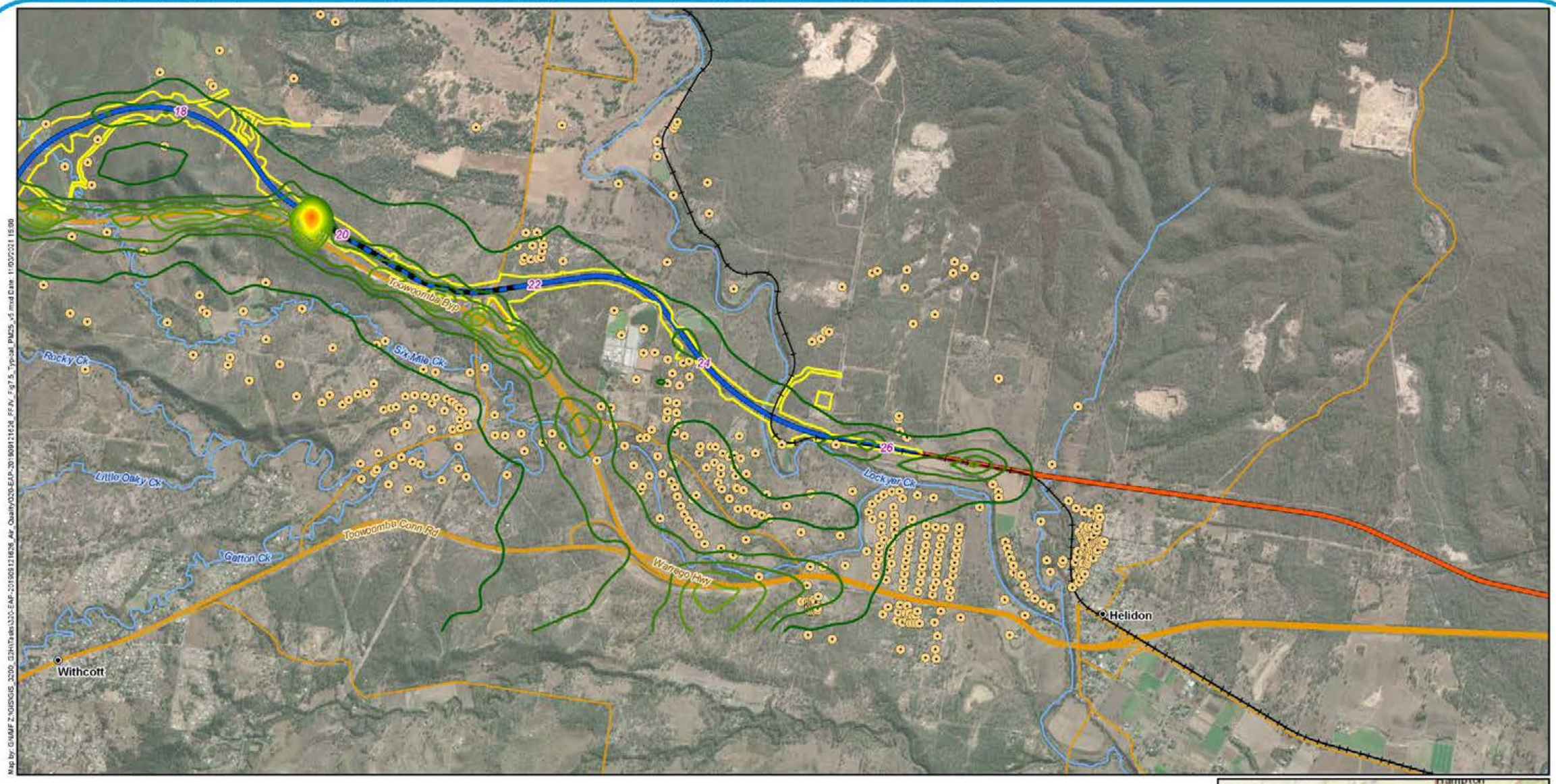
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.5b: Typical scenario predicted cumulative $PM_{2.5}$ annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative $PM_{2.5}$ annual average ($\mu g/m^3$) ($8\ \mu g/m^3$ goal)

6.6 7.4 8.2 8.8
6.8 7.6 8.4 9
7 7.8 8.6 9.2
7.2 8 8.7 9.4



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

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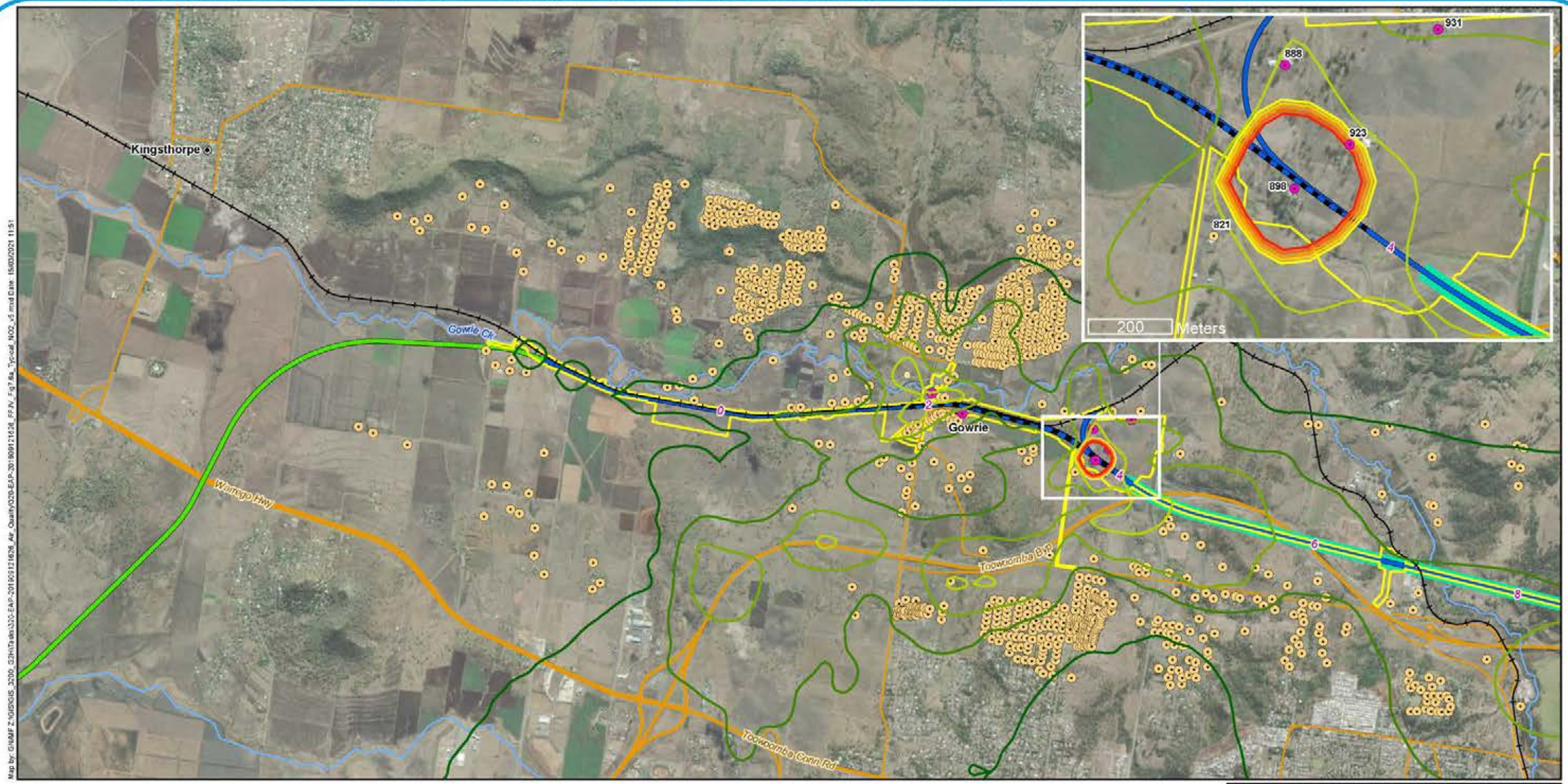
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.5c: Typical scenario predicted cumulative $PM_{2.5}$ annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative NO_2 maximum 1 hour average ($\mu g/m^3$) (250 $\mu g/m^3$ goal)

75 100 125 150 175 200 225 250 275



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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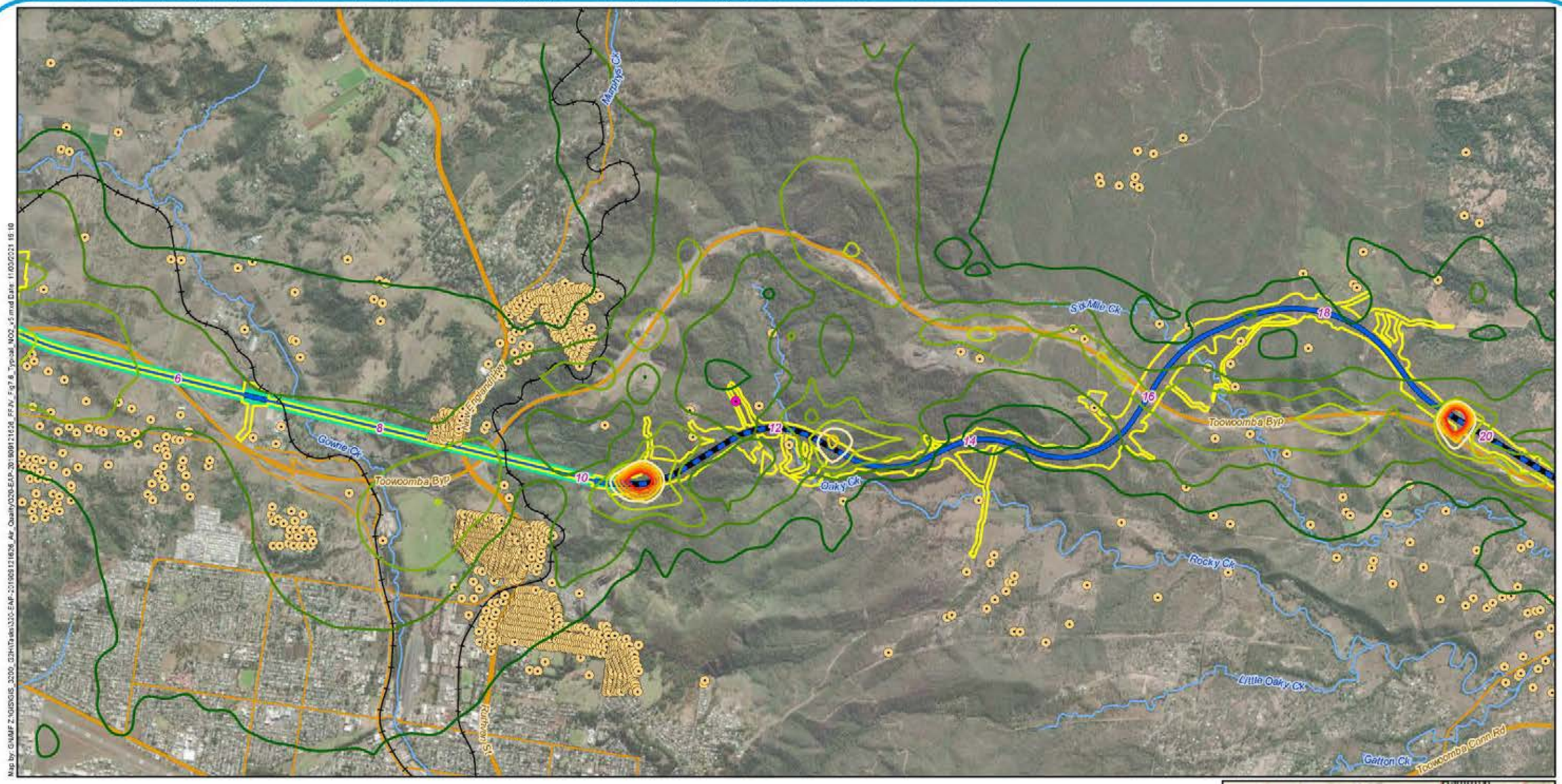
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.6a: Typical scenario predicted cumulative NO_2 maximum 1 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GNMF Z:\GIS\GIS_3200_G2H\Tables\320-EAP-20190912\626_FFIV_Fig7.6_Typical_NO2_v5.mxd Date: 11/03/2021 15:10

Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative NO_2 maximum 1 hour average ($\mu g/m^3$) (250 $\mu g/m^3$ goal)

- 75
- 100
- 125
- 150
- 175
- 200
- 225
- 250
- 275



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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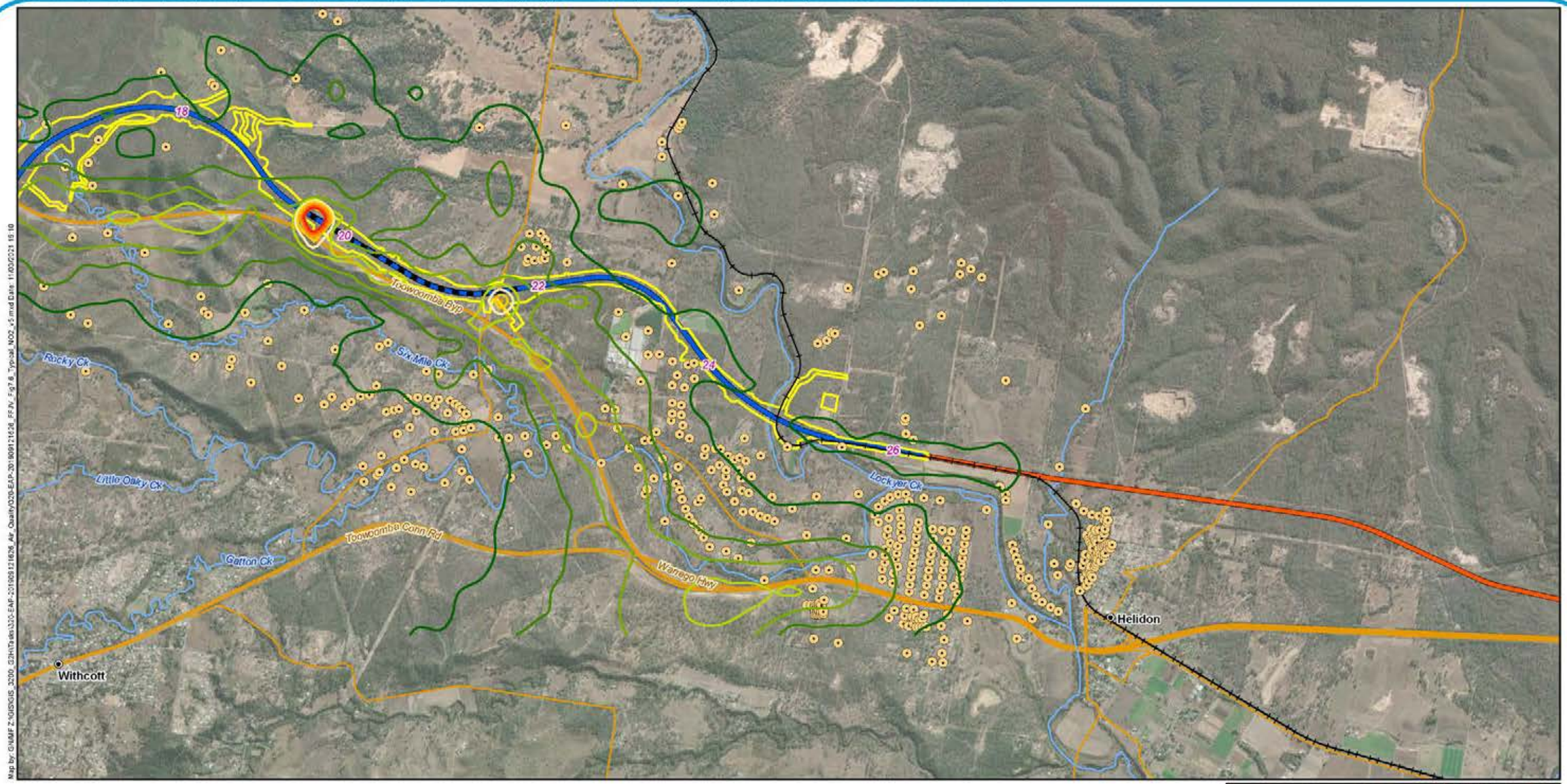
Gowrie to Helidon

Figure 7.6b: Typical scenario predicted cumulative NO_2 maximum 1 hour average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GWMF Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190912\626_Air_Quality\320-EAP-20190912\626_FFIV_Fig7.6_Typical_NO2_v5.mxd Date: 11/03/2021 15:10

Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Predicted cumulative NO_2 maximum 1 hour average ($\mu g/m^3$) (250 $\mu g/m^3$ goal)

75 150 225
100 175 250
125 200 275



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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Issue date: 11/03/2021 Version: 4
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.6c: Typical scenario predicted cumulative NO_2 maximum 1 hour average ground level concentrations

7.1.3 Discussion of impacts to receptors near the Harlaxton Quarry

Figure 7.1b, Figure 7.2b, Figure 7.4b and Figure 7.5b show the predicted concentration contours for PM_{10} (24 hour) and $PM_{2.5}$ (annual) for the AQIA study area which includes the Harlaxton Quarry. It is evident from these contour plots that predicted concentrations at the sensitive receptors located near the Harlaxton Quarry are well below the relevant air quality goals, and are close to the assumed background concentrations for each pollutant (18.4 µg/m^3 for PM_{10} 24 hour, 7.3 µg/m^3 for $PM_{2.5}$ annual) for both the peak and typical assessment scenarios.

The nearest sensitive receptor to the Project which is near the quarry is receptor R_1924, which represents a residential dwelling located on Gilmour Court, Harlaxton. Receptor R_1924 is located approximately 730m to the south-west of the eastern tunnel portal. To review the potential risk of significant cumulative impacts at this sensitive receptor and other sensitive receptors near the quarry, the predicted Project contribution to TSP, PM_{10}, $PM_{2.5}$ and dust deposition, has been reviewed for receptor R_1924. The predicted Project contributions for the peak operations scenario at receptor R_1924 are summarised as follows:

- TSP annual average: 0.15 µg/m^3 with veneering (0.2 per cent of goal), 0.39 µg/m^3 without veneering (0.4 per cent of goal)
- PM_{10} annual average: 0.11 µg/m^3 with veneering (0.4 per cent of goal), 0.23 µg/m^3 without veneering (0.9 per cent of goal)
- PM_{10} 24 hour maximum: 0.71 µg/m^3 with veneering (1.4 per cent of goal), 1.19 µg/m^3 without veneering (2.4 per cent of goal)
- $PM_{2.5}$ annual average: 0.07 µg/m^3 with veneering (0.9 per cent of criterion), 0.09 µg/m^3 without veneering (1.1 per cent of goal)
- Dust deposition: 0.01 mg/m^2/day with veneering (0.01 per cent of goal), 0.03 mg/m^2/day without veneering (0.03 per cent of goal).

Based on the Project contributions and percentage proportion of the relevant air quality goals, it is considered that the Projects contribution to pollutant concentration and deposition levels at the nearest sensitive receptors to the quarry will be minimal. Therefore, the risk of significant cumulative impact at sensitive receptors as a result of the Project and the quarry is not considered to be significant.

7.1.4 Discussion of impacts to human health

All of the pollutant species considered in detail for the assessment of operational impacts are set for the protection of human health with the exception of dust deposition and toluene (30 minute average). With the exception of receptor R_898, which is located within the permanent disturbance footprint, the predicted cumulative concentrations for all pollutants assessed are below the adopted air quality goals for both the peak and typical train volume scenarios for all sensitive receptors. The predicted cumulative concentrations for all pollutants are below the adopted air quality goals for all sensitive receptors outside the permanent disturbance footprint for the Project.

The assessment has considered background air quality in the prediction of cumulative concentrations, and therefore the results of the assessment can be used to assess the impact on human health.

On the expectation that receptor R_898 is acquired, the operation of the Project is expected to comply with the adopted air quality goals for all sensitive receptors. Therefore, the operation of the Project is not expected to significantly impact the environmental value of health and wellbeing.

It is proposed that receptor R_898 is acquired pursuant to the land acquisition process. If receptor R_898 cannot be acquired, additional mitigation measures will be required to reduce impacts to human health at this receptor.

7.1.5 Discussion of impacts to amenity

The pollutant species which have air quality goals set for the protection of the aesthetic environment are toluene (30 minute average, for odour) and dust deposition.

The predicted maximum Project contribution to deposited dust for the peak scenario at the worst affected receptor (R_898) is 1.66 mg/m^2/day with veneering and 1.88 mg/m^2/day without veneering, and 0.06 mg/m^2/day with veneering and 0.18 mg/m^2/day without veneering at the second worst affected receptors (R_923 with veneering, and R_2591 without veneering). Each of these predicted contributions represent less than 2 per cent of the adopted air quality goal of 120 mg/m^2/day.

Odour concentrations have not been modelled specifically as emissions from combustion engines such as locomotives do not typically require odour assessment. However, toluene and xylenes are pollutant species which commonly require odour assessment (BCC 2014) and therefore predicted concentrations of these species have been reviewed to screen the potential for odour impacts.

The predicted Project contribution to concentrations of toluene and xylenes at the worst affected receptors within and outside the permanent disturbance footprint for the peak scenario are summarised as follows:

- Toluene:
  - Predicted 30 minute maximum contribution:
    - Within the permanent disturbance footprint: 2.84 x 10^{-2} µg/m^3, which represents less than 0.1 per cent of the 30 minute air quality goal (1,100 µg/m^3), and 0.1 per cent of the adopted background concentration (23 µg/m^3)
    - Outside the permanent disturbance footprint: 8.63 x 10^{-3} µg/m^3, which represents less than 0.1 per cent of the 30 minute air quality goal (1,100 µg/m^3), and less than 0.1 per cent of the adopted background concentration (23 µg/m^3)
  - Predicted 24 hour maximum contribution:
    - Within the permanent disturbance footprint: 1.34 x 10^{-2} µg/m^3, which represents less than 0.1 per cent of the 24 hour air quality goal (4,100 µg/m^3), and less than 0.1 per cent of the adopted background concentration (21.7 µg/m^3)
    - Outside the permanent disturbance footprint: 2.26 x 10^{-3} µg/m^3, which represents less than 0.1 per cent of the 24 hour air quality goal (4,100 µg/m^3), and less than 0.1 per cent of the adopted background concentration (21.7 µg/m^3)
  - Predicted annual average maximum contribution
    - Within the permanent disturbance footprint: 1.52 x 10^{-3} µg/m^3, which represents less than 0.1 per cent of the annual average air quality goal (400 µg/m^3), and 0.1 per cent of the adopted background concentration (18.5 µg/m^3)
    - Outside the permanent disturbance footprint: 8.66 x 10^{-5} µg/m^3, which represents less than 0.1 per cent of the annual average air quality goal (400 µg/m^3), and less than 0.1 per cent of the adopted background concentration (18.5 µg/m^3)
- Xylenes:
  - Predicted 24 hour maximum contribution
    - Within the permanent disturbance footprint: 1.85 ug/m^3, which represents less than 0.2 per cent of the 24 hour air quality goal (1,100 µg/m^3), and 5 per cent of the adopted background concentration (37.6 µg/m^3)
    - Outside the permanent disturbance footprint:0.31 which represents less than 0.1 per cent of the 24 hour air quality goal (1,100 µg/m^3), and 0.8 per cent of the adopted background concentration (37.6 µg/m^3)

- Predicted annual average maximum contribution
  - Within the permanent disturbance footprint: 0.21 µg/m^3, which represents less than 0.1 per cent of the annual average air quality goal (950 µg/m^3), and 0.6 per cent of the adopted background concentration (33.8 µg/m^3)
  - Outside the permanent disturbance footprint: 0.01 µg/m^3, which represents less than 0.1 per cent of the annual average air quality goal (950 µg/m^3), and less than 0.1 per cent of the adopted background concentration (33.8 µg/m^3).

Based on the magnitude of the predicted Project contributions, and as Table 7.2 and Table 7.3 show that the predicted cumulative concentration and deposition levels are well below the air quality goals for toluene, xylenes and deposited dust, the operation of the Project is not expected to adversely impact the environmental values of aesthetic environment. Therefore, the risk of amenity impacts as a result of the operation of the Project is considered to be low. The assessment has considered emissions from the Project alignment, crossing loops and the tunnel, and therefore all of these emission sources are considered to provide low risk of impacts to amenity.

7.1.6 Discussion of impacts to the assimilative capacity of the air environment

The assessment has considered background air quality in the prediction of cumulative concentrations and deposition levels at sensitive receptors and has therefore considered the assimilative capacity of the air environment in determining compliance with the adopted air quality goals.

The remaining assimilative capacity of the receiving environment with the operation of the Project has been calculated for TSP, PM_{10}, $PM_{2.5}$ and NO_2, which are the pollutants emitted in the highest quantities by the operation of the Project. The remaining assimilative capacity for the peak and typical train volume scenarios have been calculated for the worst affected receptors within and outside the permanent disturbance footprint for the Project with the results presented in Table 7.4 and Table 7.5. It is highlighted that this is a conservative assessment of the assimilative capacity of the receiving environment as predicted concentrations vary significantly at different sensitive receptors.

Table 7.4 and Table 7.5 show that for receptor R_898, due to the predicted exceedances at this receptor there is no remaining assimilative capacity for 1 hour concentrations of NO_2, 24 hour concentrations of $PM_{2.5}$ (with and without veneering) and PM_{10} (without veneering) and annual average concentrations of $PM_{2.5}$ (with and without veneering) for both the peak and typical scenarios.

Table 7.4 and Table 7.5 show that for the worst affected sensitive receptor outside the permanent disturbance footprint, the pollutant with the highest predicted change to the assimilative capacity of the air environment is NO_2, which is predicted to change by 41 per cent for 1 hour predictions and 25 per cent for annual average predictions for both the peak and typical scenarios. However, it is noted that for this receptor the remaining assimilative capacity is 31 per cent for 1 hour concentrations, and 62 per cent for annual average concentrations.

For particulates at all sensitive receptors outside the permanent disturbance footprint, Table 7.4 and Table 7.5 show that with veneering included the maximum change to the assimilative capacity of the receiving environment is 20 per cent for 24 hour $PM_{2.5}$, which is the predicted change for both the peak and typical scenarios. Without veneering the maximum change to the assimilative capacity of the receiving environment is 21 per cent for 24 hour PM_{10} for both the peak and typical scenarios.

Table 7.4 Remaining assimilative capacity for worst affected sensitive receptors within and outside the permanent disturbance footprint for peak operation

Pollutant	Averaging period	Receptor[a]	Project only contribution (µg/m^3)	Total cumulative concentration (µg/m^3)	Air quality goal (µg/m^3)	Remaining assimilative capacity at worst affected receptor (per cent)[b, c]	Change to assimilative capacity at worst affected receptor (per cent)
TSP	Annual average (with veneering)	R_898	5.1	48.1	90	47	6
		R_2591	2.2	45.0		50	3
	Annual average (without veneering)	R_898	9.5	52.3		42	11
		R_2591	7.7	50.6		44	9
PM_{10}	24 hour maximum (with veneering)	R_898	31.8	49.2	50	2	64
		R_821	5.6	23.1		54	11
	24 hour maximum (without veneering)	R_898	35.3	**52.7**		-5	71
		R_224	13.2	30.7		39	27
	Annual average (with veneering)	R_898	4.3	21.5	25	14	18
		R_2591	1.2	18.4		26	5
	Annual average (without veneering)	R_898	6.5	23.7		5	26
		R_2591	4.0	21.2		15	16
$PM_{2.5}$	24 hour maximum (with veneering)	R_898	29.7	**37.3**	25	-49	119
		R_821	5.1	12.7		49	20
	24 hour maximum (without veneering)	R_898	30.2	**37.9**		-51	121
		R_821	5.2	12.8		49	21
	Annual average (with veneering)	R_898	3.5	**10.1**	8	-26	45
		R_2548	0.4	7.3		9	10
	Annual average (without veneering)	R_898	3.9	**10.4**		-31	49
		R_2591	0.8	7.4		8	11

Pollutant	Averaging period	Receptor[a]	Project only contribution (µg/m^3)	Total cumulative concentration (µg/m^3)	Air quality goal (µg/m^3)	Remaining assimilative capacity at worst affected receptor (per cent)[b, c]	Change to assimilative capacity at worst affected receptor (per cent)
NO_2	1 hour maximum	R_898	215.1	**286.6**	250	-15	87
		R_397	97.1	171.9		31	41
	Annual average	R_898	44.5	53.9	62	13	74
		R_2548	5.1	23.6		62	25

Table notes:

Results in **bold** exceed the relevant air quality goal

a Results are presented for the worst affected receptor within the permanent disturbance footprint, and the worst affected receptor outside the permanent disturbance footprint. The first row (receptor R_898) presents the modelled result for the worst affected receptor within the permanent disturbance footprint, with the second row presenting the modelled result for the worst affected receptor outside the permanent disturbance footprint

b The remaining assimilative capacity of the receiving environment at the worst affected receptor considering contributions from the operation of the Project and non-project sources.

c Negative percentage values occur for pollutants where the air quality goal is exceeded.

Table 7.5 Remaining assimilative capacity for worst affected sensitive receptors within and outside the permanent disturbance footprint for typical operation

Pollutant	Averaging period	Receptor[a]	Project only contribution (µg/m^3)	Total cumulative concentration (µg/m^3)	Air quality goal (µg/m^3)	Remaining assimilative capacity at worst affected receptor (per cent)[b, c]	Change to assimilative capacity at worst affected receptor (per cent)
TSP	Annual average (with veneering)	R_898	4.8	47.7	90	47	6
		R_2591	1.8	44.6		50	2
	Annual average (without veneering)	R_898	8.4	51.2		43	9
		R_2591	6.3	49.2		45	7
PM_{10}	24 hour maximum (with veneering)	R_898	31.5	48.9	50	2	63
		R_821	5.5	23.0		54	11
	24 hour maximum (without veneering)	R_898	34.3	**51.8**		-4	69
		R_224	10.8	28.3		43	22
	Annual average (with veneering)	R_898	4.1	21.3	25	15	17
		R_2591	1.0	18.2		27	4
	Annual average (without veneering)	R_898	5.9	23.1		8	24
		R_2591	3.3	20.4		18	13
$PM_{2.5}$	24 hour maximum (with veneering)	R_898	29.6	**37.2**	25	-49	119
		R_821	5.0	12.6		49	20
	24 hour maximum (without veneering)	R_898	30.0	**37.7**		-51	120
		R_821	5.2	12.8		49	21
	Annual average (with veneering)	R_898	3.5	**10.0**	8	-26	44
		R_2548	0.3	7.3		9	10
	Annual average (without veneering)	R_898	3.7	**10.3**		-29	48
		R_2548	0.7	7.3		9	10

Pollutant	Averaging period	Receptor[a]	Project only contribution (µg/m^3)	Total cumulative concentration (µg/m^3)	Air quality goal (µg/m^3)	Remaining assimilative capacity at worst affected receptor (per cent)[b, c]	Change to assimilative capacity at worst affected receptor (per cent)
NO_2	1 hour maximum	R_898	214.5	**286.6**	250	-15	87
		R_397	97.1	171.9		31	41
	Annual average	R_898	44.3	53.7	62	13	73
		R_2548	4.8	23.5		62	25

Table notes:

Results in **bold** exceed the relevant air quality goal

a Results are presented for the worst affected receptor within the permanent disturbance footprint, and the worst affected receptor outside the permanent disturbance footprint. The first row (receptor R_898) presents the modelled result for the worst affected receptor within the permanent disturbance footprint, with the second row presenting the modelled result for the worst affected receptor outside the permanent disturbance footprint

a The remaining assimilative capacity of the receiving environment at the worst affected receptor considering contributions from the operation of the Project and non-project sources.

b Negative percentage values occur for pollutants where the air quality goal is exceeded.

7.2 Impacts to tank water quality

Table 7.6 and Table 7.7 present the highest predicted pollutant concentrations for water tanks for the worst affected sensitive receptors for the peak and typical train operation scenarios. Results are presented for the worst affected receptor within the Projects' permanent disturbance footprint, and the worst affected receptor outside the Projects' permanent disturbance footprint. Table 7.6 and Table 7.7 also present the drinking water guideline values prescribed by the ADWG (NHMRC 2018).

The worst affected sensitive receptor within the permanent disturbance footprint is R_898, located near the western tunnel portal. The worst affected sensitive receptor outside the permanent disturbance footprint is R_2591, which is located at the eastern end of the Project and is the closest receptor to the open air section of the Project alignment (i.e. excluding the tunnel) with the exception of R_898.

Table 7.6 and Table 7.7 show that at the worst affected receptors compliance is predicted for all pollutants, with pollutant concentrations predicted to be less than 1% of the guideline values.

As pollutant concentrations in water tanks are predicted to be well below the drinking water guideline values prescribed by the ADWG (NHMRC 2018), the residual impact to drinking water is expected to be insignificant.

It is noted that the methodology applied for the assessment of impacts to water tanks is also applicable for assessment of impacts to water quality for dams assuming that the surface area (roof area) and receiving water volumes (1,000 L) are comparable. On this assumption, impacts to dam water quality are also anticipated to be insignificant. This is of note as the Project traverses between two dams associated with the Withcott Seedlings operation located on Postmans Ridge Road at Withcott. There are no other dams are present within 100 m of the Project alignment.

Table 7.6 Highest predicted water tank concentrations at sensitive receptors for peak Project operations

Pollutant	Receptor[a.]	Maximum predicted annual deposition rate (µg/m^2/s)	Estimated roof area (m^2)	Maximum predicted total deposited mass (µg)	Tank water volume (L)[d.]	Highest predicted concentration (mg/L)	Guideline value (mg/L)[e.]
Arsenic	R_898	3.41×10^{-10}	200[b.]	2.15	1,000[c.]	2.15×10^{-6}	0.01
	R_2591	4.03×10^{-11}		0.25		2.54×10^{-7}	
Cadmium	R_898	1.70×10^{-10}		1.07		1.07×10^{-6}	0.002
	R_2591	2.02×10^{-11}		0.13		1.27×10^{-7}	
Lead	R_898	1.70×10^{-9}		10.75		1.07×10^{-5}	0.01
	R_2591	2.02×10^{-10}		1.27		1.27×10^{-6}	
Nickel	R_898	6.82×10^{-10}		4.30		4.30×10^{-6}	0.02
	R_2591	8.07×10^{-11}		0.51		5.09×10^{-7}	
Chromium VI	R_898	2.90×10^{-8}		182.73		1.83×10^{-4}	0.05
	R_2591	3.43×10^{-9}		21.62		2.16×10^{-5}	

Table notes:

a. Results are presented for the worst affected receptor within the permanent disturbance footprint, and the worst affected receptor outside the permanent disturbance footprint. The first row (receptor R_898) presents the modelled result for the worst affected receptor within the permanent disturbance footprint, with the second row presenting the modelled result for the worst affected receptor outside the permanent disturbance footprint (receptor R_2591).
b. Based upon the average surface area of a large house.
c. Assumption of a 10,000 L water tank at 10 per cent capacity, with a resultant water volume of 1,000 L.
d. The assessment has been undertaken for a water tank, but the result would also be the same for a dam assuming the volume of the dam is 1,000 L.
e. Source: ADWG (NHMRC 2018)

Table 7.7 Highest predicted water tank concentrations at sensitive receptors for typical Project operations

Pollutant	Receptor[a]	Maximum predicted annual deposition rate (µg/m²/s)	Estimated roof area (m²)	Maximum predicted total deposited mass (µg)	Tank water volume (L)[d]	Highest predicted concentration (mg/L)	Guideline value (mg/L)[e]
Arsenic	R_898	3.30×10^{-10}	200b	2.08	1,000c	2.08×10^{-6}	0.01
	R_2591	3.29×10^{-11}		0.21		2.08×10^{-7}	
Cadmium	R_898	1.65×10^{-10}		1.04		1.04×10^{-6}	0.002
	R_2591	1.65×10^{-11}		0.10		1.04×10^{-7}	
Lead	R_898	1.65×10^{-9}		10.41		1.04×10^{-5}	0.01
	R_2591	1.65×10^{-10}		1.04		1.04×10^{-6}	
Nickel	R_898	6.60×10^{-10}		4.17		4.17×10^{-6}	0.02
	R_2591	6.58×10^{-11}		0.42		4.15×10^{-7}	
Chromium VI	R_898	2.81×10^{-8}		177.04		1.77×10^{-4}	0.05
	R_2591	2.80×10^{-9}		17.64		1.76×10^{-5}	

Table notes:

a. Results are presented for the worst affected receptor within the permanent disturbance footprint, and the worst affected receptor outside the permanent disturbance footprint. The first row (receptor R_898) presents the modelled result for the worst affected receptor within the permanent disturbance footprint, with the second row presenting the modelled result for the worst affected receptor outside the permanent disturbance footprint (receptor R_2591).

b. Based upon the average surface area of a large house.

c. Assumption of a 10,000 L water tank at 10 per cent capacity, with a resultant water volume of 1000 L.

d. The assessment has been undertaken for a water tank, but the result would also be the same for a dam assuming the volume of the dam is 1,000 L.

e. Source: ADWG (NHMRC 2018).

7.3 Impacts to ecological receptors

The potential for impacts to ecological receptors has been investigated via review of predicted annual average NO_2 concentration contours. Modelling predictions for the peak and typical volume scenarios have been reviewed to determine if the annual average NO_2 air quality goal of 33 µg/m³, set for the protection of the environmental value of the health and biodiversity of ecosystems (refer Table 3.1), is exceeded within the AQIA study area.

Predicted cumulative NO_2 annual average concentration contours for the peak train volume scenario are shown in Figure 7.7. Predicted cumulative NO_2 annual average concentration contours for the typical train volume scenario are shown in Figure 7.8.

Consistent with the concentration contours plots for PM_{10} (24 hour), $PM_{2.5}$ (annual) and NO_2 (1 hour) shown in Figure 7.1 to Figure 7.6, Figure 7.7 and Figure 7.8 show that the highest predicted annual average NO_2 concentrations are predicted at the locations of crossing loops at the western and eastern portals of the Toowoomba Range tunnel. The crossing loops are the dominant source of NO_2 emissions, and have a greater impact on the concentration contours than emissions from the tunnel portals due to the quantity of air which is purged from the tunnel and the dilution which this provides for emissions from the tunnel portals. Consistent with the concentration contour plots for other pollutant species, the shape of the concentration contours near the crossing loops and tunnel portals is influenced by the topography near these areas.

The concentration contours shown in Figure 7.7 and Figure 7.8 show that the annual average NO_2 air quality goal (33 µg/m^3) is predicted to be exceeded outside the permanent disturbance footprint of the Project at the following locations:

- The western end of the Toowoomba Range tunnel western crossing loop, at a maximum distance outside the permanent disturbance footprint of approximately 5 m for both the peak and typical train volume scenarios. There are no remnant and regrowth ecosystems in this area (refer Appendix I: Terrestrial and Aquatic Ecology)
- The Toowoomba Range tunnel eastern portal and crossing loop, at a maximum distance outside the permanent disturbance footprint of approximately 40 m (north of the footprint) for the peak scenario, and approximately 30 m (north of the footprint) for the typical scenario. The majority of the area to the north of the permanent disturbance footprint is mapped as non-remnant (refer Appendix I: Terrestrial and Aquatic Ecology)
- At the western end of the Postmans Ridge crossing loop, to the south of the permanent disturbance footprint of the Project within the road corridor of the Toowoomba Bypass for both the peak and typical train volume scenarios. Part of the remnant and regrowth ecosystems in this area have been cleared to accommodate the Toowoomba Bypass, with clearing also proposed for the Project disturbance footprint in this area (refer Appendix I: Terrestrial and Aquatic Ecology).

The concentration contours shown in Figure 7.7 and Figure 7.8 are cumulative predictions, and include emissions from the Toowoomba Bypass. The influence of emissions from the Toowoomba Bypass is evident in Figure 7.7 and Figure 7.8, with elevated concentrations predicted along the alignment of the road, including exceedances of the annual average NO_2 air quality goal (33 µg/m^3). As discussed in Section 5.3.1.7, the methodology adopted for the modelling of emissions from the Toowoomba Bypass is expected to over-estimate emissions from traffic on this road, and therefore over-predict concentrations of NO_2.

Based on the limited areas outside the Project permanent disturbance footprint at which the annual average NO_2 air quality goal of 33 µg/m^3 is predicted to be exceeded and the level of disturbance (current and required for the Project), it is considered unlikely that significant impacts to ecological receptors, including remnant and regrowth ecosystems, will occur as a result of the operation of the Project.

7.4 Agricultural impacts

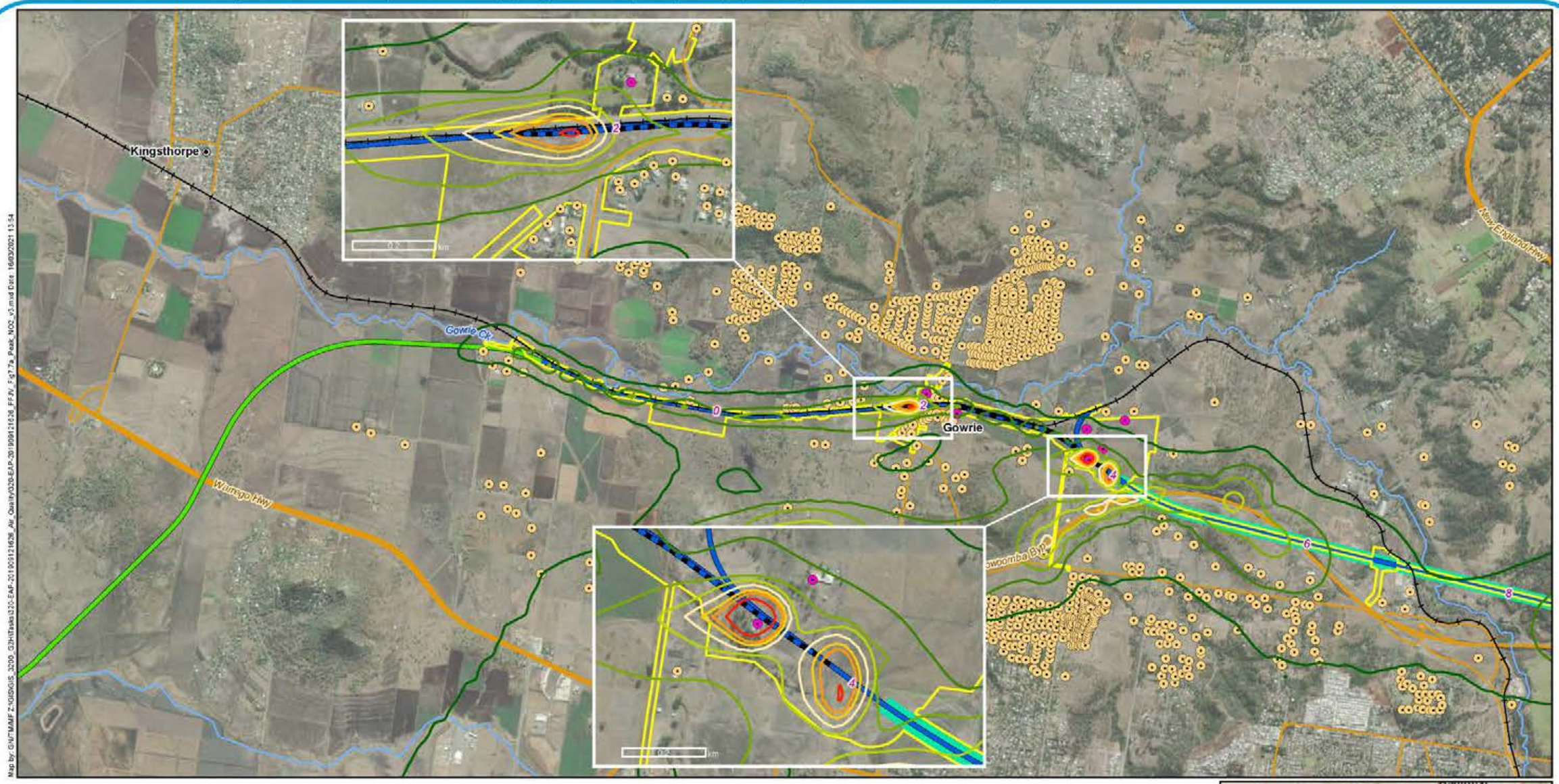
The predicted maximum dust deposition levels for the worst affected receptors in the AQIA study area are shown in Table 7.2 and Table 7.3 for the typical and peak train volume scenarios with and without veneering. The worst affected receptor outside the Projects' permanent disturbance footprint is receptor R_2591. The predicted maximum cumulative deposition levels at receptor R_2591 were 50.1 mg/m^2/day with veneering, and 50.2 mg/m^2/day without veneering. The predicted deposition levels were the same for the peak and typical train volume scenarios.

As discussed in Section 3.6, research on vegetation response to dust deposition impact has shown that a measurable reduction in crop growth is not observed below a dust deposition rate of 1,000 mg/m²/day (Doley 2003), and that a deposition rate of up to 4,000 mg/m²/day does not influence the amount of feed cattle eat or the amount of milk produced (Andrews & Skriskandarajah 1992).

For each of the scenarios assessed the predicted maximum cumulative dust deposition level at the worst affected receptor outside the permanent disturbance footprint is well below these levels, with the highest predicted level being 50.2 mg/m^2/day without veneering. Based on the predicted results the impact of dust deposition on agricultural uses within the AQIA study area is not anticipated to be significant.

In addition to deposited dust, NO_2 has the potential to impact agricultural land uses (refer Section 2.4.2). However, as discussed in Section 7.3, there is limited area outside the Project permanent disturbance footprint at which the annual average NO_2 air quality goal of 33 µg/m^3 (set for the protection of the health and biodiversity of ecosystems) is predicted to be exceeded. Based on the predicted annual average concentrations of NO_2 within the AQIA study area, it is considered unlikely that significant impacts to agricultural receptors will occur as a result of the operation of the Project.

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GNTM/MF Z:\GIS\GIS_3200_G2H\Tasks\310-EAP-20190912\638_Air_Quality\026-EAP-20190912\638_FFW_Fig7.7a_Peak_NO2_v3.mxd Date: 16/03/2021 13:54

Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Peak scenario predicted cumulative NO_2 annual average ground level concentrations ($\mu g/m^3$) (33 $\mu g/m^3$ goal for ecosystems, 62 $\mu g/m^3$ goal for human health and wellbeing)

10 20 33
12 25 40
15 30



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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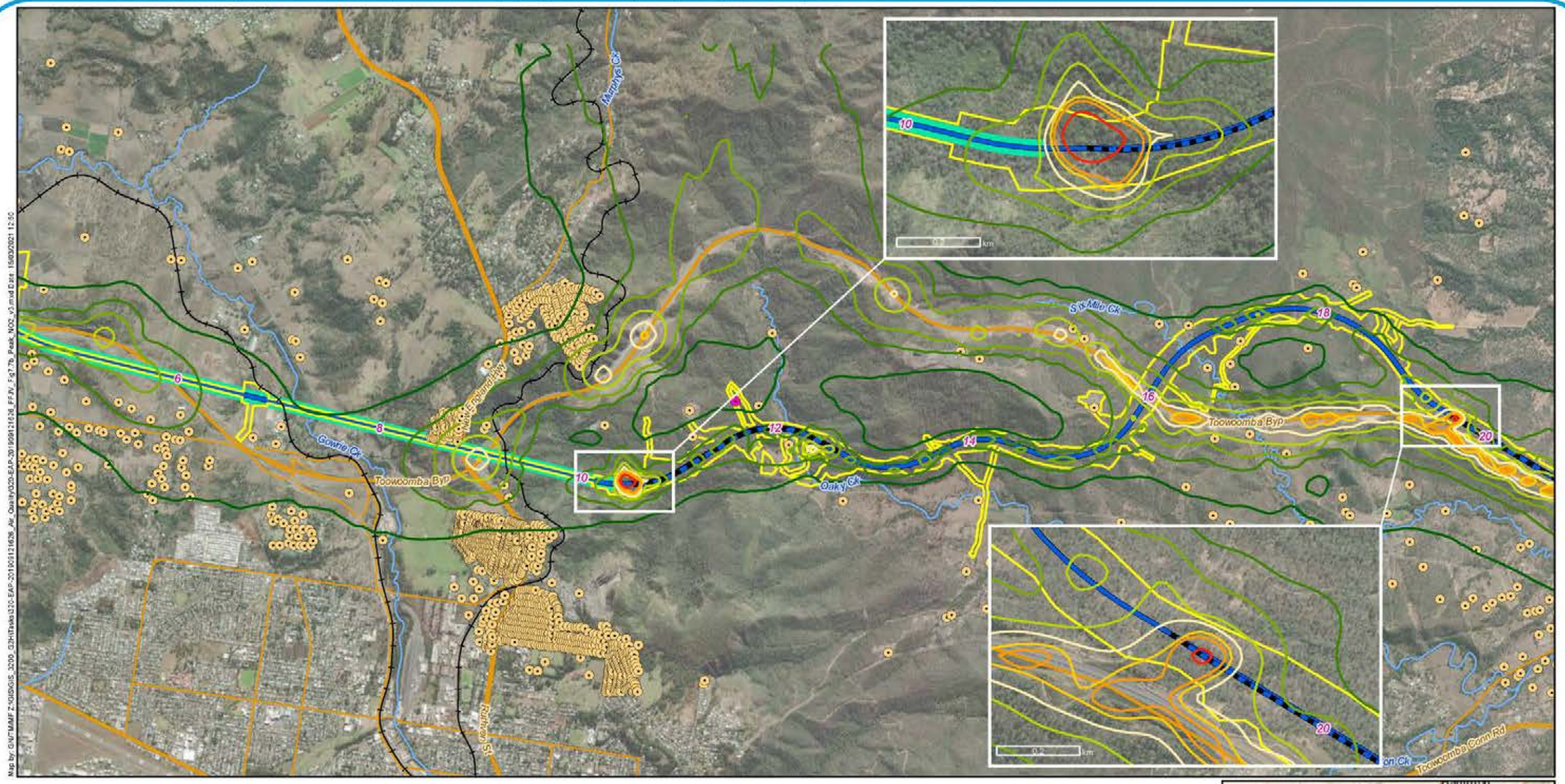
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.7a: Peak scenario predicted cumulative NO_2 annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Peak scenario predicted cumulative NO_2 annual average ground level concentrations ($\mu g/m^3$) (33 $\mu g/m^3$ goal for ecosystems, 62 $\mu g/m^3$ goal for human health and wellbeing)

10, 12, 15, 20, 25, 30, 33, 40



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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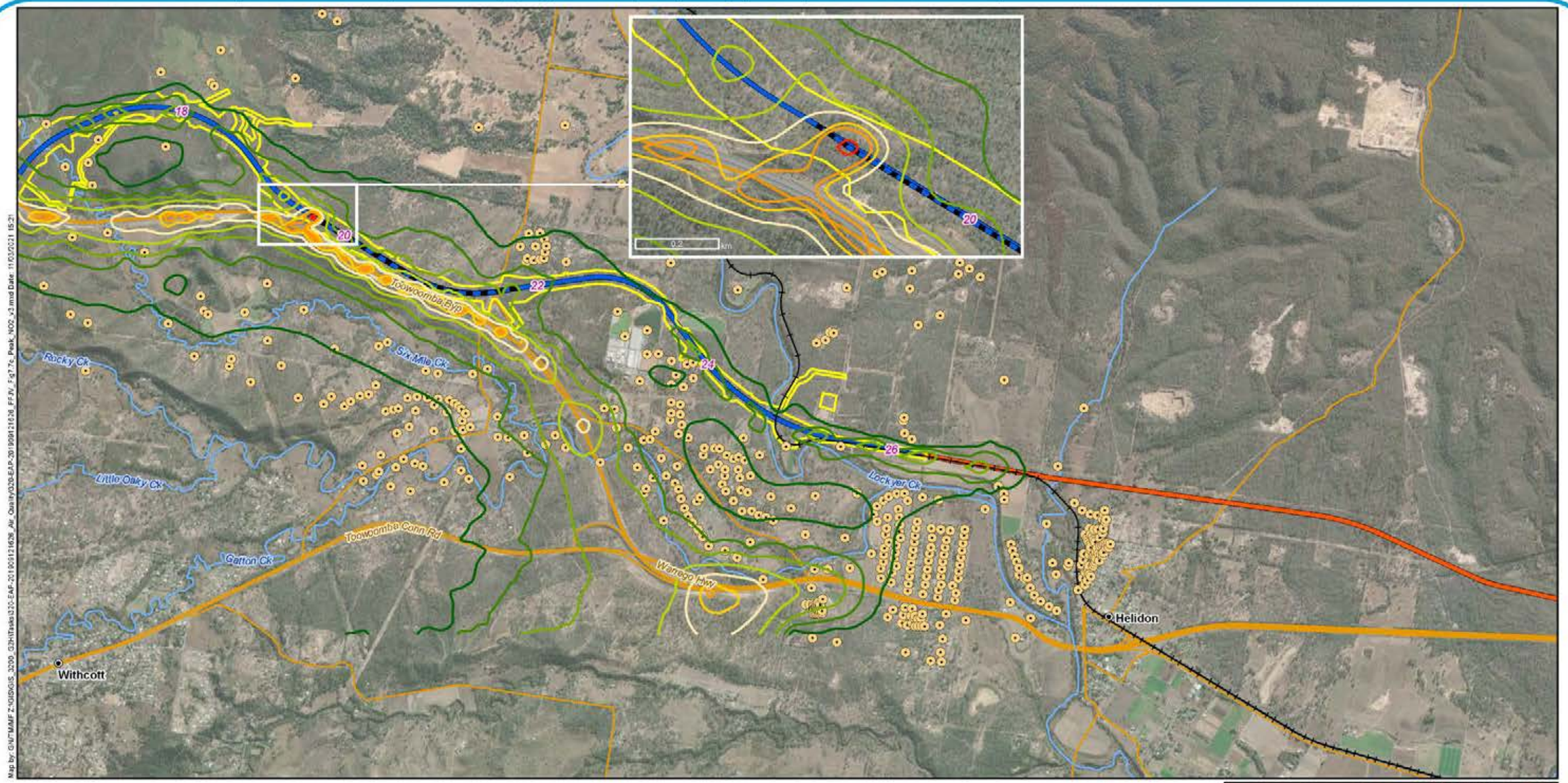
Gowrie to Helidon

Figure 7.7b: Peak scenario predicted cumulative NO_2 annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GN/TM/MF Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\320-EAP-201909121626_FFJV_Fig7.7c_Peak_NO2_v3.mxd Date: 11/03/2021 15:21

Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Peak scenario predicted cumulative NO_2 annual average ground level concentrations ($\mu g/m^3$) (33 $\mu g/m^3$ goal for ecosystems, 62 $\mu g/m^3$ goal for human health and wellbeing)

- 10
- 12
- 15
- 20
- 25
- 30
- 33
- 40



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.7c: Peak scenario predicted cumulative NO_2 annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- B2G project alignment
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Typical scenario predicted cumulative NO_2 annual average ground level concentrations ($\mu g/m^3$) (33 $\mu g/m^3$ goal for ecosystems, 62 $\mu g/m^3$ goal for human health and wellbeing)

10, 12, 15, 20, 25, 30, 33, 40



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

Future Freight
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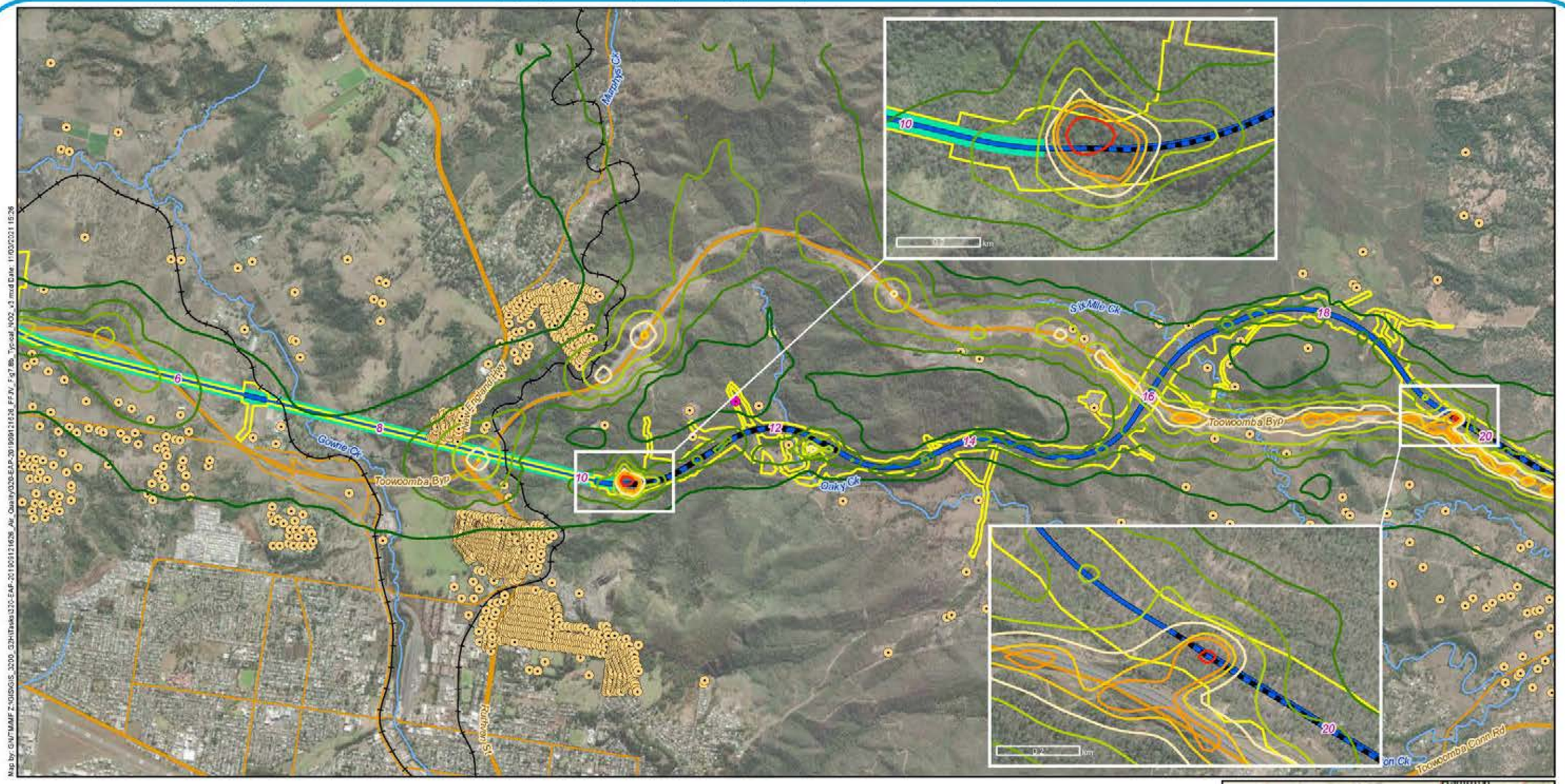
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.8a: Typical scenario predicted cumulative NO_2 annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- 5 Chainage (km)
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Tunnel
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Typical scenario predicted cumulative NO_2 annual average ground level concentrations ($\mu g/m^3$) ($33\ \mu g/m^3$ goal for ecosystems, $62\ \mu g/m^3$ goal for human health and wellbeing)

- 10
- 12
- 15
- 20
- 25
- 30
- 33
- 40



A3 scale: 1:40,000
0 0.5 1 1.5 2 2.5km

Future Freight
Integrating Community, Environment and Engineering

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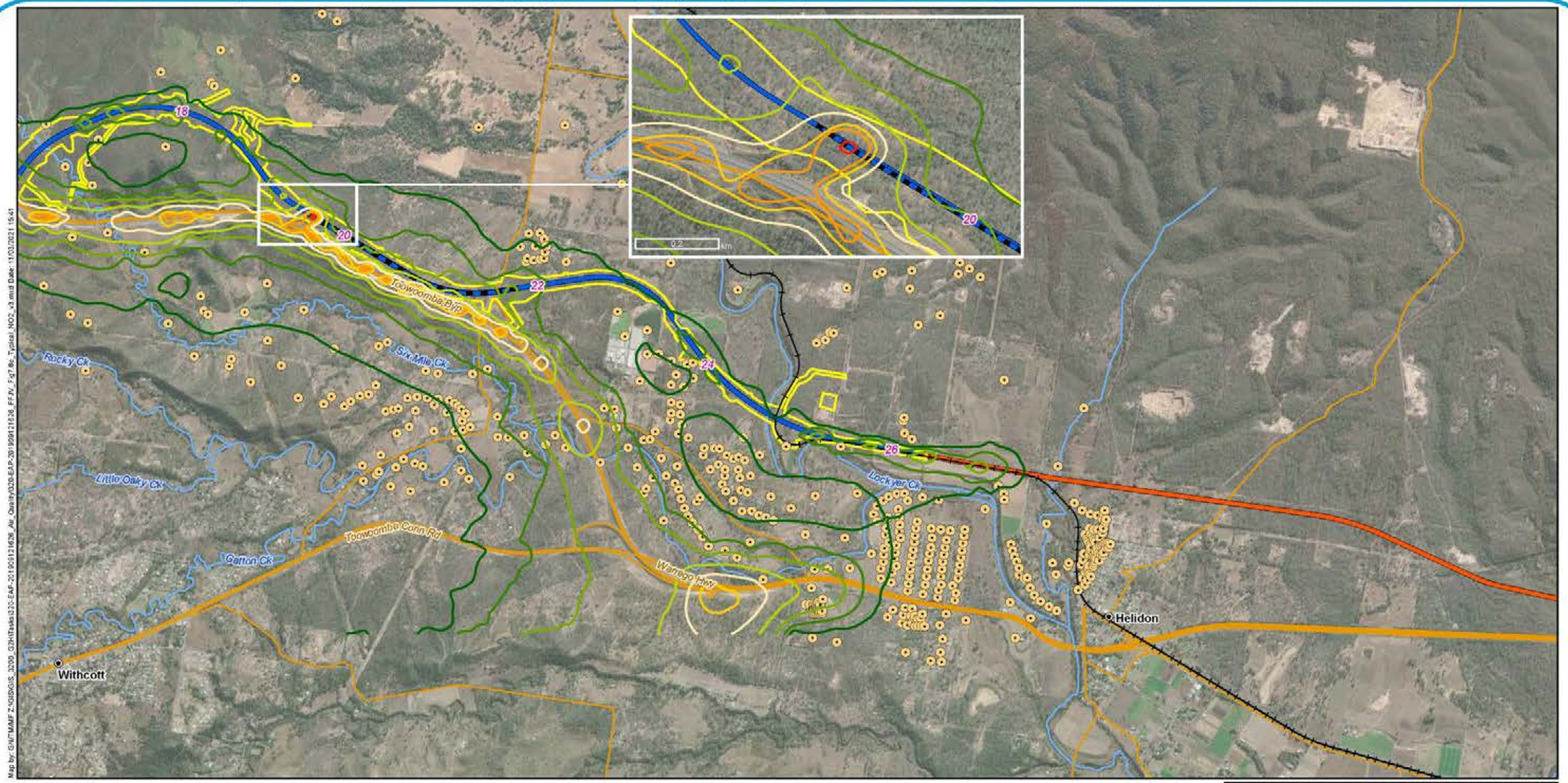
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.8b: Typical scenario predicted cumulative NO_2 annual average ground level concentrations

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: GN/TM/MF Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\320-EAP-201909121626_FFJV_Fig7.8c_Typical_NO2_v3.mxd Date: 11/03/2021 15:41

Legend

- 5 Chainage (km)
- Sensitive receptors
- Localities
- G2H project alignment
- H2C project alignment
- Crossing loop
- Existing rail
- Watercourses
- Major roads
- Minor roads
- EIS disturbance footprint

Typical scenario predicted cumulative NO_2 annual average ground level concentrations ($\mu g/m^3$) (33 $\mu g/m^3$ goal for ecosystems, 62 $\mu g/m^3$ goal for human health and wellbeing)

- 10
- 12
- 15
- 20
- 25
- 30
- 33
- 40



A3 scale: 1:40,000

0 0.5 1 1.5 2 2.5km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 11/03/2021 Version: 2
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 7.8c: Typical scenario predicted cumulative NO_2 annual average ground level concentrations

7.5 Agricultural train odour impacts

Odour emissions from agriculture freight train pass-bys are expected to be highly diluted due to the volume of air which will pass through and around the train over the duration of travel, and therefore odour emissions from moving agriculture freight trains are considered unlikely to cause significant impact or exceedance of the odour criterion.

Table 7.5 presents an assessment of odour impacts from livestock freight trains using the FIDOL factors. Livestock trains are considered to be the agriculture freight with the highest potential to impact sensitive receptors (e.g. livestock has a greater potential for odour emissions when compared to grain) and therefore have been assumed for the assessment of odour.

Table 7.8 Summary of FIDOL factors for odour generated by agricultural trains

FIDOL factor	Livestock trains
Frequency (F)	During peak operations, it is expected that a maximum of six livestock trains per week will travel the alignment. As such, the frequency of the event is low, with an average of less than one livestock train per day during peak periods.
Intensity (I)	Odour intensity is expected to range from strong to very strong for livestock trains.
Duration (D)	Duration of exposure is expected to be short, with the time of exposure limited to the length of time taken for the train to pass a point along the alignment. At crossing loops, the duration of exposure is expected to be longer. Exact duration at the crossing loops will be subject to individual train operation.
Offensiveness (O)	The offensiveness of the odour is expected to be unpleasant.
Location (L)	The land use of the receiving environment can be classified as mainly rural residential, rural, and residential for the small townships and suburbs of Toowoomba located near the alignment, including Gowrie, Cranley, Mount Kynoch, Blue Mountain Heights, Lockyer, Postmans Ridge and Helidon Spa. Due to the land use of the receiving environment odour from agricultural activities and livestock is expected to be common to the existing ambient air environment. People living and visiting rural areas often have a higher tolerance for rural activities and their associated effects; thus, having a lower sensitivity to the odours expected.

It is expected that odour produced from passing trains or trains stopped at crossing loops could be of high intensity and offensiveness, depending on the separation distance to the nearest sensitive receptors and the sensitivity of the receptor to odour. The main area of concern is the western tunnel portal crossing loop due to its proximity to and the number of sensitive receptors. The closest receptor within the Project disturbance footprint is located approximately 20 m from the western tunnel portal (Receptor R_898), with the closest receptor outside the footprint located approximately 60 m (Receptor R_410) from the western tunnel portal crossing loop.

However, impacts are expected to be infrequent and of a short duration (i.e. one hour or less), and the Project is located in a predominantly rural area where odour from agricultural uses is likely to be common to the existing airshed. Based on the reasoning provided, odour emissions from agriculture freight are considered unlikely to result in significant impact to neighbouring sensitive receptors.

7.6 In-tunnel air quality

One of the primary objectives of the tunnel ventilation system design was maintaining acceptable air quality inside the tunnel and at the tunnel portals. Tunnel ventilation design and the assessment of in tunnel air quality was undertaken considering normal, purge, emergency and maintenance operations for express, superfreighter, coal and passenger train types travelling both uphill and downhill in the tunnel. Other train consists were not considered as these train services have less critical design requirements for the ventilation system compared to the larger freight trains which were modelled.

The analysis used the Subway Environmental Simulation computer program to determine the air flows, temperature and pollutant levels in varying design cases for different trains and Computational Fluid Dynamics to determine the effects of thermal stratification on tunnel air temperatures for specific train types.

The ventilation system has been designed such that the tunnel will undergo a purge cycle following train passages, to ventilate the tunnels of any residual pollutants and heat and ensure a suitable environment prior to the next train entering the tunnel. Tunnel ventilation scenarios based on emission rates from various locomotives travelling through the tunnel were modelled considering the purging methodology of the tunnel.

Tunnel ventilation design focused on maintaining of acceptability of air quality inside the tunnel considering human exposure and locomotive manufacturer requirements for air intake quality. The key pollutants considered were CO, NO_2 and NO. The air quality criteria adopted for the design of the tunnel ventilation for systems are summarised as follows:

- NO_2: in tunnel concentration criteria of 1 ppm (approximately 1,947 µg/m^3 at 15ºC) for passenger services and 3 ppm (approximately 5,840 µg/m^3 at 15ºC) for freight services
- NO: in tunnel time weighted average (TWA) concentration criteria of 25 ppm (approximately 31,750 µg/m^3 at 15ºC)
- CO: in tunnel concentration criteria of 87 ppm (approximately 103,087 µg/m^3 at 15ºC).

Table 7.9 compares the adopted tunnel design in-tunnel air quality criteria for NO_2 and CO to criteria adopted elsewhere in Australia and other areas around the world, as presented by Longley (2014).

Comparison of in-tunnel air quality criteria has not been undertaken for NO as this pollutant is not typically of concern in tunnels as there is no objective for NO to protect human health. The NO in-tunnel air quality criteria which was adopted for the tunnel design was sourced from SafeWork Australia workplace exposure standards.

Table 7.9 In-tunnel air quality guideline concentration values for Australia and other countries

Pollutant	Concentration	Averaging period (minutes)	Notes
CO	200 ppm	3	Cross City and Lane Cove tunnels, Sydney
	100 ppm	5	Hong Kong
	50 ppm	15	CityLink tunnels, Melbourne
	70 ppm	15	PIARC from 2010, Clem7 and Airport Link tunnels, Brisbane
	87 ppm	**15**	**Adopted tunnel design in-tunnel air quality criterion for Toowoomba Range tunnel**
	87 ppm	15	M5 East, Cross City and Lane Cove tunnels, Sydney
	100 ppm	15	PIARC
	120 ppm	15	United States
	50 ppm	30	Cross City and Lane Cove tunnels, Sydney
NO_2	1 ppm	5	Hong Kong
	0.4 ppm	15	France from 2010
	0.75 ppm	15	Norway (tunnel midpoint)
	1 ppm	**15**	**Adopted tunnel design in-tunnel air quality criterion for Toowoomba Range tunnel (for passenger trains)**
	1 ppm	15	New Zealand (design standard only)
	1.5 ppm (tunnel end)	15	Norway (tunnel end)
	0.5 ppm	20	Belguim

The adopted in-tunnel air quality criteria for the Toowoomba Range tunnel are consistent with in-tunnel air quality guideline values adopted elsewhere in Australia and internationally.

The CO criterion is consistent with what was implemented for Sydney tunnels (i.e. M5 East, Cross City and Lane Cove tunnels), which also adopted the 87 ppm criterion. However, it is slightly higher than in-tunnel air quality CO criterion of 70 ppm used for the Clem7 and Airport Link tunnels in Brisbane. The NO_2 criterion is consistent with the New Zealand design standard of 1 ppm. However, it is marginally higher than most in-tunnel NO_2 criterion for Norway, Belgium and France, which range from 0.4 to 1.5 ppm. However, these in-tunnel air quality criteria are implemented for road tunnels in major urban areas that may experience thousands of vehicles per hour. As such, they are not specifically appropriate for a rail tunnel with significantly less traffic such that which is proposed as part of the Project. However, application of this criteria for a rail tunnel would mean that air quality is kept below threshold limits that are more stringent than required. Thus, lowering the inherent associated health risks from exposure to these pollutants. Overall, it is expected that the adopted in-tunnel air quality criteria for the tunnel ventilation design is appropriate to maintain acceptable air quality within the tunnel.

The Toowoomba Range tunnel ventilation system will include in-tunnel air quality monitoring to measure concentrations of NO_2, NO and CO to ensure that pollutant concentrations are appropriate for train entry. If in-tunnel monitoring determines that purging is required, the purging cycle will commence after the last locomotive has cleared the portal before a new train will be allowed to enter the tunnel.

8 Cumulative impact assessment

When numerous projects occur within close proximity to each other there is potential for cumulative impacts. It is a requirement of the Project ToR that cumulative impacts associated with the Project are considered. AQIAs are typically undertaken as cumulative assessments, as air quality goals are cumulative and require consideration of background air quality and existing emission sources.

As cumulative impacts for the operation phase of the Project (which included the Toowoomba Bypass, Harlaxton Quarry, sections of the West Moreton System and the adjacent Inland Rail projects) have already been considered in detail in this assessment (refer Section 7), further assessment of cumulative impacts is only required for the construction phase of the Project.

The following sections present the assessment methodology and results of the assessment of the significance of cumulative impacts for the construction phase of the Project.

8.1 Assessment matrix

The assessment of cumulative impacts has considered existing and proposed projects which have the potential to cause cumulative air quality impacts as a result of emissions to air during construction and or operation of the identified projects, and the projects spatial and temporal relationship with the Project.

The significance of the potential cumulative impact has been determined qualitatively by using professional judgement to select the most appropriate relevance factor for each aspect as identified in Table 8.1. The sum of the relevance factors determines the impact significance and consequence which are summarised in Table 8.2. For example, if a project is assigned a probability of impact score of 2, a duration of impact score of 3, a magnitude/intensity of impact score of 1 and a sensitivity of receiving environment score of 1, the significance of impact would be Medium (2+3+1+1 = 7).

Table 8.1 Assessment matrix

Aspect	Relevance factor		
	Low	Medium	High
Probability of impact	1	2	3
Duration of impact	1	2	3
Magnitude/Intensity of impact	1	2	3
Sensitivity of receiving environment	1	2	3

Table 8.2 Impact significance

Impact significance	Sum of relevant factors	Consequence
Low	1-6	Negative impacts need to be managed by standard environmental management practices. Monitoring as part of general project monitoring program.
Medium	7-9	Mitigation measures likely to be necessary and specific management practices to be applied. Targeted monitoring program may be required, where appropriate.
High	10-12	Alternative actions should be considered and/or mitigation measures applied to demonstrate improvement. Targeted monitoring program necessary, where appropriate.

8.2 Cumulative impacts

A total of 10 projects located within or near the AQIA study area have been assessed for cumulative air quality impacts during the construction phase of the Project. These projects are either currently operational or will be constructed and or operational during the construction phase of the Project.

The majority of the projects which have been considered are expected to have limited potential for cumulative impacts. However, these projects have been included due to their location within or near the AQIA study area and the nature and scale of the project development.

The projects which have been considered in the cumulative impact assessment are listed in Table 8.3. The locations of the assessed projects are shown in Figure 8.1.

The Toowoomba Bypass has been considered in this cumulative impact assessment. However, existing rail traffic on the West Moreton System has not been considered. Background air quality for particulates, including PM_{10} and TSP, has been assessed using monitoring data available from the Inland Rail AQMS (refer Section 4.4.2). The Inland Rail AQMS is located approximately 200 m to the south of the existing West Moreton System rail corridor at Charlton, and measured concentrations at the Inland Rail AQMS are influenced by emissions from existing rail traffic. As the IAQM construction dust assessment methodology considers background air quality (refer Section 6.1.4), the influence of the West Moreton System has already been considered in the construction phase assessment.

Table 8.3 Projects considered for the cumulative impact assessment

Project and Proponent	Location	Description	Construction dates
B2G (ARTC)	Immediately west of the Project, from the Queensland/New South Wales Border to Gowrie.	Comprised of approximately 216.2 km single-track dual-gauge freight railway as part of the ARTC Inland Rail Program.	2021 to 2026.
H2C(ARTC)	Immediately east of the Project, from Helidon to Calvert.	Comprised of approximately 48 km single-track dual-gauge freight railway as part of the ARTC Inland Rail Program.	2021 to 2026.
Toowoomba Bypass	Located between Helidon Spa at its eastern end to Athol at its western end.	Toowoomba Bypass is a new 41 km stretch of highway. The Toowoomba Bypass consists of the Warrego Highway (A2) from the Warrego east interchange (Helidon Spa) to the Warrego west interchange (Charlton), and the Gore Highway (A39) from the Warrego west interchange (Charlton) to the Gore Highway interchange (Athol).	The Toowoomba Bypass was officially opened to traffic in September 2019.
InterLinkSQ	Located 13 km west of Toowoomba. The InterLinkSQ project is adjacent to the Project alignment (located immediately south of the alignment) at the western end.	The InterLinkSQ project includes 200 ha of new transport, logistics and business hubs. InterLinkSQ is an intermodal freight terminal linking rail, road, air and sea in South East Queensland. The project site is located on the narrow-gauge regional rail network and interstate network.	2017 to 2037 Assumed to continue development until Inland Rail is operational.
Wellcamp Business Park (Wagners)	Wellcamp, QLD. Located approximately 7 km to the south-west of the western end of the Project alignment.	The Wellcamp Business Park is a 500 ha industrial and commercial park that forms part of the Toowoomba Enterprise Hub. The Business Park is located in close proximity to the Toowoomba Wellcamp Airport and other major transportation infrastructure.	Operational – subject to continuing construction and expansion.
Witmack Industry Park	Wellcamp, QLD. Located approximately 3.5 km to the south of the western end of the Project alignment.	The Witmack Industry Park is a large industrial land development that offers large size industrial land parcels. Businesses situated within the Witmack Industrial Park include the Toowoomba Pulse Data Centre.	Operational – subject to continuing construction and expansion.

Project and Proponent	Location	Description	Construction dates
Charlton Logistics Park	Wellcamp, QLD. Located approximately 2.8 km to the south of the western end of the Project alignment.	The Charlton Logistics Park is part of the Toowoomba Enterprise Hub and provides fully serviced 2 ha sites and is well situated for potential transport and logistics operators due to its proximity to transport infrastructure.	Operational – subject to continuing construction and expansion.
Gatton West Industrial Zone (GWIZ)	3 km north-west of Gatton. Located approximately 12 km east of the eastern end of the Project alignment, adjacent to the northern boundary of H2C.	Industrial development including a transport and logistics hub on the Warrego Highway.	2019 to 2024
Harlaxton Quarry	Harlaxton, QLD. Located approximately 900 m to the south of the Projects' eastern tunnel portal.	An existing quarry specialising in the production of road base material and aggregates.	Operational
Asterion Medicinal Cannabis Project	Wellcamp, QLD. Located approximately 9 km to the south-west of the western end of the Project alignment.	A high-tech medicinal cannabis cultivation, research and manufacturing facility. The project involves construction of a 40 hectare glasshouse to produce 20,000 plants per day at full capacity. Medicinal grade cannabis grown at the facility will be manufactured into a range of medicinal products, including single patient packs, cannabis oils, gels, salts and related products, destined solely for the medicinal market. The facility will be powered by renewable energy.	2020 to 2021

Table note:

Although several of the projects listed in Table 8.3 are currently under construction or are operational, emissions from these projects will not be represented by the background air quality concentrations adopted for the assessment (refer Section 4.4.6) due to the location of the air quality monitoring stations referenced.

The results of the assessment of the significance of cumulative impacts during the construction phase of the Project are presented in Table 8.4.

The majority of the assessed projects considered in the cumulative impact assessment have the greatest potential to cause cumulative impacts during their construction phase, the only exception being the Harlaxton Quarry and Toowoomba Bypass, which are already operational and therefore construction is not required. With the exception of the B2G, H2C, Harlaxton Quarry and the Toowoomba Bypass projects (which have been included in the operational assessment for the Project), emissions from the operation of the assessed projects are not considered to be significant and do not have the potential to generate cumulative impacts.

The relevance factor for the sensitivity of the receiving environment in Table 8.4 has been assigned as Low for all projects. This factor has been assigned considering the number of sensitive receptors which may be affected by cumulative impacts with the assessed project, the sensitivity to the emissions which will cause the impact (e.g. sensitivity to dust), and the mostly isolated nature of construction phase emissions from the Project.

Based on the assigned relevance factors, Table 8.4 shows that cumulative air quality impacts are expected to be of Low significance for all assessed projects.

Mitigation measures for the construction phase of the Project are proposed in Section 9.3. The mitigation measures for the Project will reduce the potential for cumulative impacts at sensitive receptors. In addition to the proposed mitigation measures, visual and quantitative dust monitoring will be undertaken at sensitive receptor locations near the Harlaxton Quarry (refer Section 9.4.2) to assist in managing cumulative impacts at these receptors.

Implementation of the proposed mitigation measures in combination with the implementation of a CEMP is expected to be sufficient to minimise the risk of significant cumulative impacts.

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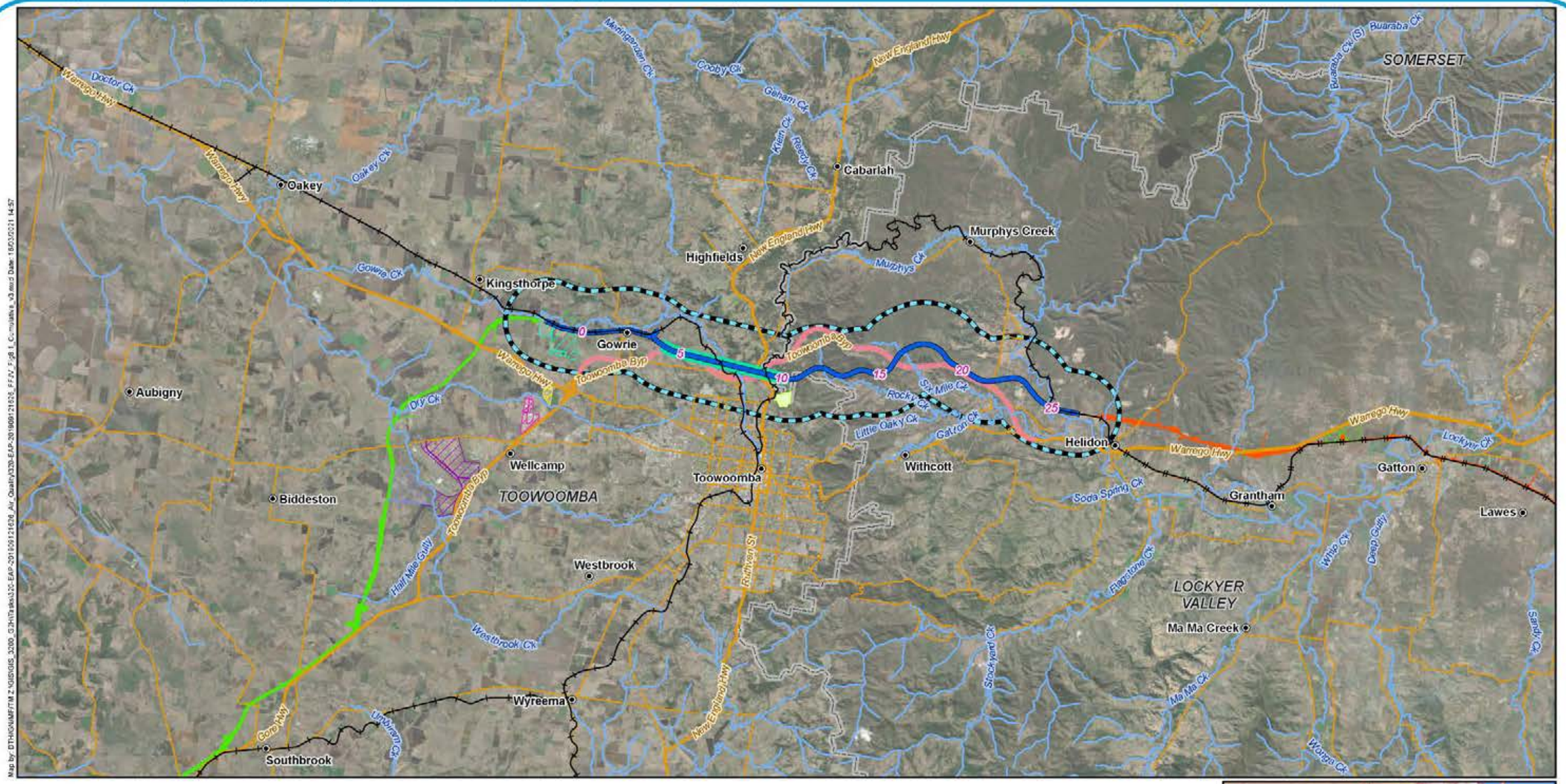



Legend

- 5 Chainage (km)
- Localities
- Existing rail
- Tunnel
- G2H project alignment
- Watercourses
- Major roads
- Minor roads
- Local Government Areas
- Air Quality study area

Projects

- Border to Gowrie (B2G)
- Helidon to Calvert (H2C)
- Asterion Medicinal Cannabis Project
- Charlton Logistics Park
- Gatton West Industrial Zone
- Harlaxton Quarry
- InterLink SQ
- Wellcamp Business Park
- Witmack Industry Park
- Toowoomba Bypass

A3 scale: 1:200,000

0 2 4 6 8 10km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 3
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Figure 8.1:
Location of projects considered in cumulative impact risk assessment

Table 8.4 Cumulative impact assessment of assessable projects

Project	Potential cumulative impact	Aspect	Relevance factor	Sum of relevance factors	Impact significance	Comments and management measures
B2G (ARTC)	The construction of B2G will occur concurrently with the construction of the Project. Air emissions during construction could impact receptors located near both projects. B2G and the Project will operate concurrently. Air emissions from the operation of B2G have been assessed as part of the assessment of the operation phase of the Project.	Probability of the impact	Medium (2)	6	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ It is considered unlikely that construction for each project will occur in the same localised area simultaneously to the extent that would cause significant impacts to existing receptors. Sensitive receptors are sparse in the area where construction for each project is likely to overlap, and the majority of receptors have significant separation distance to the Project disturbance footprint. ▪ Proposed mitigation measures for the construction phase of the Project are presented in Section 9.3. Mitigation measures are also proposed for the B2G project in the projects EIS. ▪ Cumulative impacts as a result of the operation of both projects has been assessed in detail, with the results of the operational phase assessment presented in Section 7.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			
H2C(ARTC)	The construction of H2C will occur concurrently with the construction of the Project. Air emissions during construction could impact receptors located near both projects. H2C and the Project will operate concurrently. Air emissions from the operation of H2C have been assessed as part of the assessment of the operation phase of the Project.	Probability of the impact	Medium (2)	6	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ It is considered unlikely that construction for each project will occur in the same localised area simultaneously to the extent that would cause significant impacts to existing receptors. Sensitive receptors are sparse in the area where construction for each project is likely to overlap, and the majority of receptors have significant separation distance to the Project disturbance footprint. ▪ Proposed mitigation measures for the construction phase of the Project are presented in Section 9.3. Mitigation measures are also proposed for the H2C project in the projects EIS. ▪ Cumulative impacts as a result of the operation of both projects has been assessed in detail, with the results of the operational phase assessment presented in Section 7.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			

Project	Potential cumulative impact	Aspect	Relevance factor	Sum of relevance factors	Impact significance	Comments and management measures
Toowoomba Bypass	The operation of the Toowoomba Bypass will occur concurrently with the construction and operation of the Project. Pollutant species emitted from road traffic on the Toowoomba Bypass include NO_x, PM_{10} and $PM_{2.5}$. The cumulative impact of the operation of both projects has been considered in detail via dispersion modelling of emissions from the Toowoomba Bypass.	Probability of the impact	Low (1)	4	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ Construction dust is the concern during the construction phase of the Project. Particulate emissions from the operation of the Toowoomba Bypass will be low in comparison to potential construction dust emissions from the Project and therefore the potential for cumulative impacts is limited. ▪ Road traffic emissions also disperse efficiently following release and therefore it is unlikely that cumulative impacts could occur outside the Toowoomba Bypass corridor. ▪ No additional mitigation measures are required further to those proposed for the Project. Proposed mitigation measures for the construction phase of the Project are presented in Section 9.3. ▪ Cumulative impacts as a result of the operation of both projects has been assessed in detail, with the results of the operational phase assessment presented in Section 7.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			
InterLinkSQ	The construction of the Project will occur concurrently with the construction and operation of the InterLinkSQ project. Construction dust emissions during the construction phase of the InterLinkSQ project could be significant when activities such as earthworks are being undertaken. Air emissions during the operation of InterLinkSQ will predominantly be limited to combustion engine emissions (transport vehicles) and are not expected to be significant in magnitude.	Probability of the impact	Medium (2)	6	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ It is considered unlikely that construction for each project will occur in the same localised area simultaneously to the extent that would cause significant impacts to existing receptors. Sensitive receptors are sparse in the area where construction for each project is likely to overlap, and the majority of receptors have significant separation distance to the Project disturbance footprint. ▪ No additional mitigation measures are required further to those proposed for the Project.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			

Project	Potential cumulative impact	Aspect	Relevance factor	Sum of relevance factors	Impact significance	Comments and management measures
Wellcamp Business Park (Wagners)	The operation and potential further development (construction) of the business park will occur concurrently with the construction of the Project. Air emissions will likely occur during further development, subject to the construction activities required. Air emissions from the operation of the business park will occur and may change subject to the type of land uses accommodated in the future. Existing land uses are not considered significant emission sources for the purpose of assessing impacts to the AQIA study area.	Probability of the impact	Low (1)	4	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ Due to the separation distance between the business park and the Project alignment (approximately 7 km), the risk of significant cumulative impacts as a result of construction phase emissions is low. ▪ Operational emissions from the business park are not considered significant, and the risk of significant cumulative impacts for this phase is negligible. ▪ No additional mitigation measures are required further to those proposed for the Project.
		Duration of the impact	Low (1))			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			
Witmack Industry Park	The operation and potential further development (construction) of the business park will occur concurrently with the construction of the Project. Air emissions will likely occur during further development, subject to the construction activities required. Air emissions from the operation of the business park will occur and may change subject to the type of land uses accommodated in the future. Existing land uses are not considered significant emission sources for the purpose of assessing impacts to the AQIA study area.	Probability of the impact	Low (1)	4	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ Due to the separation distance between the business park and the Project alignment (approximately 3.5 km), the risk of significant cumulative impacts as a result of construction phase emissions is low. ▪ Operational emissions from the business park are not considered significant, and the risk of significant cumulative impacts for this phase is negligible. ▪ No additional mitigation measures are required further to those proposed for the Project.
		Duration of the impact	Low (1))			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			

Project	Potential cumulative impact	Aspect	Relevance factor	Sum of relevance factors	Impact significance	Comments and management measures
Charlton Logistics Park	The operation and potential further development (construction) of the business park will occur concurrently with the construction of the Project. Air emissions will likely occur during further development, subject to the construction activities required. Air emissions from the operation of the business park will occur and may change subject to the type of land uses accommodated in the future. Existing land uses are not considered significant emission sources for the purpose of assessing impacts to the AQIA study area.	Probability of the impact	Low (1)	4	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ Due to the separation distance between the business park and the Project alignment (approximately 2.8 km), the risk of significant cumulative impacts as a result of construction phase emissions is low. ▪ Operational emissions from the business park are not considered significant, and the risk of significant cumulative impacts for this phase is negligible. ▪ No additional mitigation measures are required further to those proposed for the Project.
		Duration of the impact	Low (1))			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			
Gatton West Industrial Zone (GWIZ)	The construction and operation phases of the GWIZ project overlap with the construction phase of the Project. Air emissions will likely occur during construction, subject to the construction activities required. The operation of the GWIZ will likely increase road traffic on surrounding roads, including the Warrego Highway.	Probability of the impact	Low (1)	4	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ Due to significant separation distance (12 km), the risk of cumulative impacts is considered to be low. ▪ Increases in road traffic emissions as a result of the GWIZ project are not expected to be significant. ▪ No additional mitigation measures are required.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			
Harlaxton Quarry	The quarry is currently operational and is expected to operate concurrently with the construction of the Project. The quarry specialises in the production of road base material and aggregates and it is expected that the operation of the quarry will emit particulates and minor emissions of gaseous pollutants. Air emissions from the operation of the quarry and the construction of the Project could impact sensitive receptors located near both projects. The cumulative impact of the operation of both projects has been considered in detail via analysis of dispersion modelling results for receptors near the quarry.	Probability of the impact	Medium (2)	6	Low	▪ The significance of cumulative impacts is considered to be Low. ▪ The nearest sensitive receptor to the Project which is also located near the quarry is receptor R_1924, which represents a residential dwelling located on Gilmour Court, Harlaxton. Receptor R_1924 is located approximately 610 m south-west of the Project disturbance footprint of the Project, and approximately 350 m north-east of the nearest active area of the quarry. The projects are located at different orientations to the nearest sensitive receptors.
		Duration of the impact	Medium (2)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			

Project	Potential cumulative impact	Aspect	Relevance factor	Sum of relevance factors	Impact significance	Comments and management measures
						■ Proposed mitigation measures for the construction phase of the Project will reduce the potential for cumulative impacts at sensitive receptors near the quarry. To further manage potential cumulative impacts, visual and quantitative dust monitoring will be undertaken at sensitive receptor locations near the quarry (refer Section 9.4.2). ■ Cumulative impacts as a result of the operation of both projects has been assessed in detail in Section 7.1.3.
Asterion Medicinal Cannabis Project	Construction and operation of the Asterion project will occur concurrently with the construction of the Project. Construction dust emissions during the construction phase of the Asterion project could be significant when activities such as earthworks are being undertaken. However, there is significant separation distance between the Asterion project and the Project (9 km). Emission sources during operation of the Asterion project are expected to be limited to transport vehicles. The magnitude of these emissions is considered to negligible with respect to potential cumulative impacts.	Probability of the impact	Low (1)	4	Low	■ The significance of cumulative impacts is considered to be Low. ■ Due to significant separation distance (9 km), the risk of cumulative impacts is considered to be low. ■ Operational emissions are not expected to be significant, and the risk of significant cumulative impacts for this phase is negligible. ■ No additional mitigation measures are required.
		Duration of the impact	Low (1)			
		Magnitude/intensity of the impact	Low (1)			
		Sensitivity of the receiving environment	Low (1)			

9 Mitigation and management measures

This section outlines the mitigation measures included in the Project design and identifies proposed mitigation measures to manage impacts to air quality in the pre-construction, and construction and operational phases of the Project.

No comprehensive guideline information is currently available for best practice environmental management measures for the emissions of air pollutants from construction related emissions in QLD or Australia. Guidance on management measures is provided within the UK IAQM Guideline for the assessment of dust from demolition and construction (UK IAQM 2014). Many of the UK IAQM guideline document measures are tailored to the UK and therefore are not necessarily applicable for Australia. However, where similar conditions do exist, the proposed mitigation measures for the Project do align with the suggested mitigation measures from the UK IAQM guideline document.

In addition to the UK IAQM guideline document, the mitigation measures proposed for the construction phase of the Project are also generally consistent with construction mitigation measures prescribed by the New Zealand Ministry for the Environment (NZMfE) Good Practice Guide for Assessing and Managing Dust (NZMfE 2016) and the NSW EPA *Air quality guidance note for construction sites* (NSW EPA 2017), which are both recognised technical guideline documents.

Mitigation measures prescribed in the NPI Emissions estimation technique manual for Mining (NPI 2012) are also considered applicable for the construction phase, and selected mitigation measures from this document are proposed.

The mitigation measures that are proposed for the Project are considered to represent best practice environmental management of air emissions.

9.1 Design measures

The initial mitigation measures presented in Table 9.1 have been incorporated into the Project design. These design measures have been identified through collaborative development of the design and consideration of environmental constraints and issues, including proximity to sensitive receptors. These design measures are relevant to both construction and operational phases of the Project.

Table 9.1 Initial mitigation in design

Aspect	Initial mitigation
Emissions from refuelling activities during construction	The planning, siting and assessment of potential fuel storage locations has taken into consideration the location of sensitive receptors.
Emissions from construction vehicles	The horizontal and vertical alignment has been established to optimise the earthworks and minimise excess spoil (where possible). By minimising the material deficit for construction of the Project, the volume of material required to be handled and transported has been reduced. The Project design also accommodates the storage and management of excess material from the excavation of the Toowoomba Range tunnel at the western tunnel portal (i.e. stockpile within the railway corridor). Less material handling reduces potential road transport truck movements and vehicular emissions. Construction phase haulage routes that provide the shortest journey time between origin and destination have been considered. These routes restrict fuel consumption and vehicular emissions. A traffic impact assessment of these routes has been undertaken as presented in Appendix U: Traffic Impact Assessment.
Fugitive dust emissions (windborne erosion) during construction and operation	The Project disturbance footprint defined in Project design has aimed to minimise clearing extents to that required to construct and operate the works. Railway batters and other exposed surfaces have been designed to enable stabilisation to reduce fugitive dust emissions.

Aspect	Initial mitigation
Emissions from operational locomotives	The Project design through the steep terrain and topographical constraints associated with the Toowoomba Range (approximately 22 km) maintains a constant gradient of 1.55 per cent, while also maximising curve radius conducive to freight rail. This results in faster train transit time and less locomotive emissions.
In-tunnel air quality	The mechanical ventilation system for the Toowoomba Range tunnel has been designed to maintain air quality inside the tunnel to an acceptable standard considering human exposure and locomotive manufacturer requirements for air intake quality. This includes monitoring systems to detect pollutant leaks and inform purging events.

9.2 Operational management measures

Dust and air quality management measures will be incorporated into the environmental risk management frameworks that will apply to third party freight train operators as part of network access agreements. The network access agreements established will require train operators to prepare suitably detailed environmental management plans for their operations detailing how the operator will manage all risks. These plans will include clear performance requirements and traceable corrective measures and be subject to verification and auditing by ARTC as the rail network manager.

As the rail network manager, ARTC would be responsible for reviewing risks with regards to accessing and operating on the rail network, including environmental management. Where necessary, ARTC as the rail network manager will impose conditions on rail operators to implement controls for the reduction or mitigation of these risks.

The assessment of the operational phase has assessed impacts considering the inclusion of a number of the operational management measures as required by the South West Supply Chain Coal Dust Management Plan (2019), such as veneering, are applied to the Project. The mitigation measures in the Coal Dust Management Plan aim to minimise surface lift-off of materials in transit and establish protocols to minimise spillage onto external areas of wagons to reduce emissions. In addition to veneering, measures currently implemented through the South West Supply Chain include:

- Coal washing and moisture management
- Load profiling and use of “garden bed profile”
- Monitoring of performance.

The assessment of the operational phase has determined that veneering will minimise and reduce potential particulate matters impacts based on the assessed volume of coal trains. The implementation of veneering has been assumed to reduce coal dust emissions from coal-laden trains by 75 per cent as discussed in Section 5.3.1.2.

Veneering is currently applied to coal trains that use the rail corridor of the West Moreton System. Therefore, existing coal trains that currently use the West Moreton System and would use the Project in the future will already implement veneering.

Prior to operation of the Project, engagement will be undertaken with existing stakeholders and members of the South West Supply Chain (including QR, DES, etc) with regards to coal dust management and monitoring requirements necessary to maintain the integrity of the existing South West Supply Chan Coal Dust Management Plan.

Maintenance activities with the potential to generate dust or air quality impacts will be managed under ARTCs Environmental Management System and in accordance with the measures described in the relevant maintenance procedures and environmental management plans.

As discussed in Section 7.6, the Toowoomba Range tunnel will include in-tunnel air quality monitoring of NO_2, NO and CO as part of the ventilation system to ensure air quality within the tunnel is acceptable prior to train travel through the tunnel. The in-tunnel air quality monitoring system may be used to ensure tunnel design minimises potential environmental impacts of the tunnel ventilation system, subject to the design and specifications of the in-tunnel air quality monitoring system.

9.3 Proposed mitigation measures

In order to manage Project risks during construction a number of mitigation measures have been proposed for implementation in future phases of Project delivery, as presented in Table 9.2. These proposed mitigation measures have been identified to address to Project specific issues and opportunities, address legislative requirements, accepted government plans, policy and practice.

Table 9.2 identifies the relevant Project phase, the aspect to be managed, and the proposed mitigation measure, which is then factored into the assessment of residual significance in Table 9.3. For several of the mitigation measures proposed, the expected control efficiency (emission reduction percentage) has been nominated. The control efficiencies reported have been obtained from the NPI Emissions estimation technique manual for Mining (NPI 2012).

In the construction phases of the Project, including pre-construction activities dust sources will be variable and transitory in nature and the potential for impacts will vary with proximity to sensitive receptors.

During the commissioning phase of the Project air emissions are expected to be limited to combustion engine emissions associated with transport vehicles and train locomotives, and limited dust emissions from vehicle travel on unsealed roads. Mitigation measures for transport vehicles (dust and combustion engine emissions) are the same during the construction and commissioning phases, and therefore the mitigation measures in Table 9.2 are combined for these phases. Air emissions from train locomotives during the commissioning phase are not expected to be significant and therefore no mitigation measures are required for train locomotives in this phase.

The draft Outline Environmental Management Plan (refer EIS, Chapter 23: Draft Outline Environmental Management Plan) provides further context and the framework for implementation of these proposed mitigation and management measures.

A Construction Environmental Management Plan (CEMP) will be required for the construction of the Project to manage potential impacts from dust emissions. The mitigation measures presented in Table 9.2 will be included in the CEMP for the Project.

Table 9.2 Air quality mitigation measures

Delivery phase	Aspect	Proposed mitigation measures
Detailed design	Availability of water for dust suppression and stabilisation during construction	Prior to construction, quantities of water required for dust suppression, construction, landscaping and stabilisation activities will be confirmed. The availability and suitability of water supply sources will be determined and where water supply is deemed insufficient or in high demand for other uses, other dust suppression and stabilisation methods will be implemented.
	Emissions from refuelling activities during construction	Design of fuel storage areas will ensure that fuel tanks will be located at least 50 m from the nearest sensitive receptor, with separation distances maximised as far as practical within site restrictions.
	Fugitive dust emissions (windborne erosion) during construction and operation	Detailed design will aim to avoid increasing the Project disturbance footprint. Laydown areas and other construction-phase facilities (e.g. FBW facility) will be designed and arranged to minimise emissions and reduce the potential for impacts to air quality. Design considerations will include the locations of stockpiles, activity areas, travel routes, rumble grids and truck washdown areas, etc. The location of the permanent spoil mound at the western tunnel portal laydown area will consider proximity to sensitive receptors and allowance for mitigation measures (e.g. profiling and stabilisation of stockpile and maximising separation distance from nearest sensitive receptors (noting that the stockpile may also buffer other amenity issues)). Earthworks and landscape design of railway batters and other exposed surfaces will be designed to incorporate treatments and enable stabilisation to reduce wind erosion.
	Emissions from operation of batching plants	Design the laydown area at the eastern tunnel portal (G2H-LDN010.5) such that the concrete batching plant (if required) can be located at a position at least 500 m from the nearest sensitive receptor.
	Emissions from operation of crushing plant	Design the laydown areas at the western tunnel portal (G2H-LDN003.7) and McNamaras Road (G2H-LDN015.6) such that crushing plant (if required) can be located at a position at least 250 m from the nearest sensitive receptor.
Pre-construction and construction	Dust generation from pre-construction activities	Vehicle travel on unsealed roads will be minimised as far as practical. Sealed roads will be used where possible. Disturbed areas will be rehabilitated and stabilise as soon as practical upon completion of works. Vehicles and mobile plant will minimise idling as much as practical.
Construction and commissioning	Dust generation from earthworks, clearing and grubbing, mobile plant activity and wind erosion of exposed areas within the Project disturbance footprint	Limit clearing to the Project disturbance footprint as identified during the detailed design constructability assessment and planning. Limit clearing to that required to safely construct and operate the Project. Where practical, stage clearing and grubbing and construction activities to limit the size of exposed areas. Implement water sprays to reduce dust emissions from excavation or disturbance of soils or vegetation, or handling ballast. Implement water sprays to reduce dust emissions from trucks unloading material (anticipated emission reduction of 70 per cent). Implement water sprays to reduce dust emissions for mobile plant loading to or from material stockpiles (anticipated emission reduction of 50 per cent). To reduce wind erosion from stockpiles, the following mitigation methods may be used subject to water availability and stockpile activity: ■ Water sprays (anticipated emission reduction of 50 per cent)

Delivery phase	Aspect	Proposed mitigation measures
		■ Wind breaks or earthworks profiling (anticipated emission reduction of 30 per cent) ■ Application of rock armour/covering (anticipated emission reduction of 30 per cent) or ■ Covering of the stockpile with an impermeable covering (i.e. tarpaulin) or binding agent (anticipated emission reduction of 100 per cent). If water sprays are implemented for stockpiles, the application rate of water will be increased for stockpiles which will receive new material regularly, such as tunnel excavation stockpiles. Disturbed areas and exposed surfaces will be stabilised as a soon as practical. The following mitigation methods may be used subject to final purpose of the exposed area: ■ Initial establishment of vegetation (anticipated emission reduction of 30 per cent) ■ Maintained revegetation (anticipated emission reduction of 90 per cent) ■ Establishment of self-sustaining rehabilitation vegetation (anticipated emission reduction of 100 per cent) or ■ Sealing of exposed surface (i.e. concrete, asphalt, etc) (anticipated emission reduction of 100 per cent). Long-term stockpiles will be avoided where possible. However, where necessary (e.g. topsoil), long-term stockpiles will be established in locations with suitable separation from sensitive receptors and not in the path of prevailing winds (which would transport dust towards sensitive receptors). During periods of inactivity, stockpiles will be covered with an impermeable covering (i.e. tarpaulin) or binding agent (anticipated emission reduction of 100 per cent). Establish and communicate the protocol for notifying relevant stakeholders when potentially dust generating activities (e.g. blasting) are planned to be carried out, with contact details for queries or complaints. Monitor air quality during construction of the Project and report and audit monitoring results as discussed in EIS Chapter 23: Draft Outline Environmental Management Plan, Section 23.15.5.4. Monitor, record and audit complaints about dust and emissions in accordance with the Complaint Management Handling Procedure described in EIS Chapter 23: Draft Outline Environmental Management Plan, Section 23.13 and the requirements of the Social Impact Management Plan.
	Emission from blasting	Blasting will not be undertaken during wind conditions which are likely to transport dust emissions toward sensitive receptors within 500 m of the blasting location.
	Emissions from refuelling activities	Fuel storage areas will be located at least 50 m from the nearest sensitive receptor, with separation distances maximised as far as practical within site restrictions.
	Emissions from combustion engines (construction vehicles and generators)	Construction plant, vehicles and machinery will be maintained and operate in accordance with manufacturer's recommendations. Vehicles and mobile plant will minimise idling as much as practical. Diesel generators will be avoided where practical. Where required, generators will be located as far as possible from sensitive receptors.
	Use of non-potable water for dust suppression	Water used in dust suppression will be of suitable quality and not result in environmental or human health risks, or impact rehabilitation outcomes. Water additives used to improve dust suppression effectiveness (e.g. the addition of soil binders to water for dust suppression on roads or hard stand areas, which has a potential control efficiency up to 100 per cent) will be risk assessed prior to adoption.

Delivery phase	Aspect	Proposed mitigation measures
	Dust generated by traffic on access tracks	To reduce emissions from vehicle travel on unsealed roads, the following mitigation methods will be implemented for haul roads with receptors located within 350 m: ■ Level 1 road watering (2 litres per metre squared per hour ($L/m^2/h$)) (anticipated emission reduction of 50 per cent); ■ Level 2 road watering (greater than 2 $L/m^2/h$) (anticipated emission reduction of 75 per cent) or ■ Road sealing with binding agent or asphalt (anticipated emission reduction of 100 per cent).
	Fugitive dust emissions from vehicles transporting materials to and from site	Vehicles transporting potentially dust and/or spillage generating material to and from the construction site will have their loads covered immediately after loading (prior to traversing public roads). Rumble grids and the operation of truck washdown areas will be maintained to reduce trackout of material onto public roads where it may become resuspended.
	Cumulative effects of dust emissions from construction and external land uses or activities	Sensitive receptors near the existing Harlaxton Quarry may be impacted by the operation of the quarry and the construction phase of the Project. The cumulative impact of both sources on sensitive receptors and the effectiveness of the proposed mitigation measures for Project construction activity near the quarry will be monitored via visual monitoring and air quality monitoring as discussed in Section 9.4. In the event of legitimate complaints or measured exceedances of the Project air quality goals, enhanced mitigation will be implemented. Project construction activities to be undertaken near the quarry that have the highest potential to generate air emissions include excavation works, blasting and vehicle travel on unsealed roads. Mitigation measures for these activities are presented in this table.
	Dust generation and deposition as a result of adverse weather conditions	Avoid ground-disturbing activities including excavation and vegetation clearing during windy conditions (e.g. winds > 36 km/h or 20 knots) where practical. When avoidance of ground-disturbing activities is not practical, implement enhanced management measures, such as: ■ Increased rate of water application to haul roads (e.g. increase to Level 2 watering, >2 $L/m^2/h$) ■ Increased rate of water application to excavation and clearing areas and ■ Implement temporary stabilisation (binding agent) to access tracks and haul roads (anticipated emission reduction of 100 per cent). Where possible, stockpiles will be covered (anticipated emission reduction of 100 per cent) prior to the onset of adverse weather.
Operations	Emissions from the operation of the Project including train travel along the alignment and through the Toowoomba Range tunnel	Prior to operation of the Project engagement will be undertaken with existing stakeholders and members of the South West Supply Chain (including QR, DES, etc) with regards to coal dust management and monitoring requirements necessary to maintain the integrity of the existing South West Supply Chain Coal Dust Management Plan. The Toowoomba Range tunnel will include an in-tunnel air quality monitoring as part of the ventilation system to trigger tunnel purging one in-tunnel pollution design thresholds have been reached to ensure air quality within the tunnel is acceptable prior to train travel through the tunnel. Monitor, record and audit complaints about dust and emissions in accordance with the ARTC Complaint Management Handling Procedure and the requirements of the Social Impact Management Plan.
	Emissions from idling locomotives	Train operators will be educated on the potential impact of idling locomoties on air quality and will be encouraged to reduce idling when possible.

9.4 Monitoring, reporting and auditing

This section describes how the Project will monitor, report and audit compliance with the Project air quality goals.

9.4.1 Construction phase weather conditions monitoring

To aid in the avoidance of dust generation during adverse weather conditions, weather forecasts and observations for adverse weather (e.g. winds greater than 36 km/h) will be observed during the construction phase of the Project using existing BoM weather stations.

To assist with auditing and the analysis of air quality monitoring and complaints (if received), periods of adverse weather periods will be recorded in monthly environmental reports.

9.4.2 Construction phase air quality monitoring

Visual and quantitative air quality monitoring will be undertaken for the construction phase of the Project.

Visual monitoring of dust generation (visible plumes) will be undertaken throughout construction. Daily on-site inspections of dust generation will be undertaken by construction staff to monitor dust being generated on-site to inform mitigation measures. In addition, weekly off-site inspection will be undertaken at sensitive receptors located near high intensity construction areas such as heavily trafficked haul roads, excavation areas and laydown areas. Visual monitoring will include checks of dust deposition on horizontal surfaces such as cars and window sills. Visual monitoring will be the responsibility of the construction contractor.

Quantitative air quality monitoring will be undertaken via monitoring of dust deposition. Dust deposition monitoring will be undertaken at sensitive receptor locations near the Harlaxton Quarry, which have the potential to be impacted by emissions from the construction phase of the Project and emissions from the operation of the quarry.

Selection of the exact locations for the installation of dust deposition gauges will be undertaken by a suitably qualified air quality professional. The monitoring locations will be demarcated and sign posted.

In the event that dust deposition monitoring determines exceedance of the Projects' air quality goal (120 mg/m^2/day) at sensitive receptors, additional monitoring, including monitoring of airborne particulate concentrations (e.g. TSP or PM_{10}), may be required. If legitimate air quality complaints are received from locations which are not represented by the location of air monitoring stations, additional monitoring stations may be deployed.

In the event that dust deposition or airborne air quality monitoring determines exceedance of the Project air quality goals, corrective actions will be required to mitigate impacts and the minimise the risk of further exceedances. Corrective actions will be the responsibility of the construction contractor. However, as minimum the corrective actions will include the following:

- Review of the air quality monitoring data to determine the period/s of exceedance, along with local weather conditions
- Review of Project and non-Project related emission sources which may have been responsible for, or contributed too, the measured exceedance
- Upon identification of Project related emission source, undertake a review of the mitigation measures implemented at the time when the exceedance was recorded
- Evaluate the effectiveness of mitigation measures and standard working procedures and adjust or enhance the application of mitigation measures to reduce construction emissions and minimise the risk of future exceedances

- Monitor the effectiveness of enhanced mitigation measures, and if required, reduce the intensity of construction works.

Air quality monitoring data and logs of visual monitoring inspections will be included in the monthly environmental monitoring reports prepared by the construction contractor.

9.4.3 Operational phase air quality monitoring

Quantitative air quality monitoring will be undertaken during the operation phase at a yet to be confirmed location(s) along the QLD section of the Inland Rail alignment. As the rail network manager, ARTC would be responsible for providing support and funding for air quality monitoring.

Requirements for the air quality monitoring station, including the location of any monitoring stations will be discussed with the stakeholders of the South West Supply Chain, including DES and DTMR. It is expected that the pollutant species monitored will include dust deposition and airborne concentrations of PM_{10} and TSP, and that the monitoring station will be generally equivalent in nature to the existing monitoring stations operating as part of the South West Supply Chain Coal Dust Management Plan.

The existing monitoring stations operating as part of the South West Supply Chain Coal Dust Management Plan currently include continuous monitoring of airborne concentrations of TSP, PM_{10} and $PM_{2.5}$ at Cannon Hill, and dust deposition monitoring at Cannon Hill, Fairfield and Toowoomba.

Air quality monitoring data will be reported monthly. The responsibility for the reporting of the monitoring data and the maintenance and ongoing operation of the monitoring station will be discussed with the stakeholders of the South West Supply Chain.

In the event of complaints being received regarding air quality, appropriate response and monitoring may occur following investigation into the complaint.

In the event that exceedances of the Projects air quality goals are measured during the operational phase, corrective actions will be required to mitigate impacts and the minimise the risk of further exceedances. Requirements for corrective actions will be discussed with the stakeholders of the South West Supply Chain. However, corrective actions which may be undertaken include:

- Review of the air quality monitoring data to determine the period/s of exceedance
- Review of Project and non-Project related emission sources which may have been responsible for, or contributed too, the measured exceedance
- Upon identification of Project related emission source, undertake a review of operational activities at the time when the exceedance was recorded
- Evaluation of the effectiveness of mitigation measures and standard operational procedures with respect to the potential for future exceedances.

In addition to monitoring adjacent the rail line, in-tunnel air quality monitoring data will also be used to audit compliance with in-tunnel air quality goals.

9.4.4 Operational phase emissions reporting

Emissions reporting will be undertaken where applicable. Emissions reporting requirements will be determined during the detail design phase to be consistent with Infrastructure Sustainability Council of Australia and National Greenhouse and Energy Report requirements.

10 Residual impact assessment

10.1 Construction

Potential air quality impacts to sensitive receptors and the environmental values of human health (PM_{10}) and the aesthetic environment (TSP as deposited dust) as a result of the construction phase of the Project have been assessed in accordance with the qualitative impact assessment methodology described in Section 5.1. Assessment of the residual impact of the construction phase of the Project following the implementation of the proposed mitigation measures (refer Section 9.3) is presented in this section.

The assessment of residual impacts to sensitive receptors during the construction of the Project is presented in Table 10.1. The methodology for the residual impact assessment is summarised as follows:

- The receptor sensitivity, initial emission magnitude and initial significance for each construction activity category (earthworks, construction and trackout) presented in Table 10.1 is the assessed risk of impacts without mitigation as presented Section 6.1 and summarised in Table 6.6
- The residual emission magnitude has been determined qualitatively based on the anticipated reduction to construction dust emissions considering the available mitigation measures and the nominated control efficiencies presented in Table 9.2
- The residual significance (residual impact) has been determined using the IAQM risk matrix for each construction activity (refer Table 6.3 and Table 6.4) considering the residual emission magnitudes assigned for each activity and receptor sensitivity.

Table 10.1 shows that following the IAQM risk matrix, the residual significance with the proposed mitigation measures is low for all activities and impacts with the exception of potential impacts to human health from trackout, which is categorised as medium.

As discussed in Section 6.1.4, the sensitivity rating of high for human health impacts for the entire AQIA study area is considered conservative, and in reality the most sensitive areas to construction dust impacts will be residential areas in the several small townships or suburbs of Toowoomba located near the alignment, including Gowrie, Cranley, Mount Kynoch, Blue Mountain Heights, Lockyer, Postmans Ridge and Helidon Spa.

The IAQM construction dust assessment guidance (UK IAQM 2014) states:

> *For almost all construction activity, the aim should be to prevent significant effects on sensitive receptors through the use of suitable and effective mitigation. Experience shows that this is normally possible. Hence the residual effect will normally be "not significant".*

Consistent with the IAQM statement, it is expected that with implementation of the proposed mitigation measures the impacts to air quality with respect to dust deposition and human health will not be significant. However, mitigation measures for trackout (e.g. water sprays on haul roads) will need to be implemented diligently near residential areas to ensure that emissions are minimised to reduce the risk of impacts.

Table 10.1 Impact assessment for potential air quality impacts associated with construction

Activity	Aspect[a]	Potential impact	Receptor sensitivity	Initial significance[b]		Residual significance[c]	
				Emission magnitude	Significance	Emission magnitude	Significance
Earthworks associated with pre-construction and construction phase	All dust generating sources associated with pre-construction and construction phase earthworks	Dust deposition (aesthetic environment)	Medium	Large	Medium	Small	Low
		Human health	High	Large	High	Small	Low
Construction	All dust generating sources associated with construction phase for the Project	Dust deposition (aesthetic environment)	Medium	Large	Medium	Small	Low
		Human health	High	Large	High	Small	Low
Trackout associated with pre-construction and construction phase.	All dust generating sources associated with pre-construction and construction phase traffic associated with the Project	Dust deposition (aesthetic environment)	Medium	Large	Medium	Medium	Low
		Human health	High	Large	High	Medium	Medium

Table notes:

a Refer to Table 9.2 for reference to the proposed additional mitigation measures relevant to each aspect
b Assumes the inclusion of the initial mitigation measures specified in Table 9.1
c Assessment of residual risk once the additional mitigation measures identified in Table 9.2 have been applied.

10.2 Operation

A quantitative (compliance) assessment has been undertaken for potential operational impacts, as predicted concentrations at sensitive receptors have been assessed against legislative and other nominated air quality and water quality objectives. Dispersion modelling undertaken for the operational phase assessment has investigated mitigation measures (veneering to coal wagons) and predicted air quality impacts at sensitive receptors. The results of the dispersion modelling with respect to impacts to the environmental values of human health and wellbeing, the aesthetic environment (amenity), the health and biodiversity of ecosystems, agricultural uses and the assimilative capacity of the environment are discussed in Section 7. Section 7 presents the outcomes of the residual impact assessment for the operational phase of the Project, as these results include the influence of operational mitigation measures. However, a summary is provided in this section for completeness.

The assessment of the operational phase of the Project for residual impacts to air quality (refer Section 7.1) has determined that compliance is predicted for all air quality goals at all sensitive receptors with the exclusion of receptor R_898. Receptor R_898 (a residential dwelling) is located within the permanent disturbance footprint of the Project near the western tunnel with the land parcel expected to be acquired if the Project progresses pursuant to the land acquisition process. As such, it is expected that no permanent residence will exist at the sensitive receptor location.

As such, compliance is predicted for all air quality goals at all existing sensitive receptors which will be present during the operation of the Project, including residential dwellings, schools, and health care facilities including hospitals. Therefore, the residual air quality impact to sensitive receptors with respect to the environmental values of health and wellbeing and protecting the aesthetic environment is not anticipated to be significant.

The assessment of the operational phase of the Project for residual impacts to water quality (refer Section 7.2) has determined that compliance with the adopted water quality objectives is predicted at all receptors. The methodology applied for the assessment of impacts to water tanks is also applicable for assessment of impacts to water quality for dams assuming that the surface area (roof area) and receiving water volumes (1,000 L) are comparable. Based on the methodology applied, the residual impact to water quality as a result of emissions to air during the operation of the Project is not anticipated to be significant.

Compliance is predicted for all air quality goals at all existing sensitive receptors which will be present during the operation of the Project and therefore assimilative capacity remains at each of the assessed receptors.

As discussed in Section 7.3, based on the predicted annual average NO_2 air quality concentrations outside the permanent disturbance footprint and the existing environment associated with these areas, it is considered unlikely that significant impacts to the health and biodiversity of ecosystems will occur as a result of the operation of the Project.

Similarly, based on predicted dust deposition rates and annual average NO_2 air quality concentrations, it is considered unlikely that significant impacts to agricultural uses will occur as a result of the operation of the Project (refer Section 7.4).

11 Conclusions

An AQIA has been conducted to determine the potential impacts of the Project on air quality.

The AQIA consisted of the following tasks:

- Identification of peak and typical operational train movements for the year 2040 (i.e. worst-case emission scenario)
- Analysis of the expected construction and operational activities which may impact air quality
- Identification of the relevant environmental values for the air environment and establish air quality goals to protect or enhance the identified environmental values
- Discussion of existing air quality and local meteorology
- Identification of potential sources of air emissions due to the Project
- Identification of nearby sensitive receptors
- A qualitative risk assessment of air emissions resulting from the construction phase
- A quantitative dispersion modelling assessment of operational emissions associated with freight rail movements including travel through the Toowoomba Range tunnel and the impact on air quality and tank water quality
- Identification of mitigation and management measures to minimise potential air quality impacts
- Discussion of the monitoring, reporting and auditing practices which will be implemented for the Project
- Assessment of the residual impact with the implementation of the proposed mitigation measures.

A qualitative construction dust risk assessment was undertaken using the UK IAQM document, Guidance on the assessment of dust from demolition and construction (UK IAQM 2014). The risk of dust deposition and human health impacts due to particulate matter (PM_{10}) on surrounding areas were determined based on the scale of activities and proximity to sensitive receptors. The outcome of the assessment showed that the residual significance with the proposed mitigation measures is expected to be low or negligible. Consistent with statements made within the IAQM document, it is expected that with effective implementation of the proposed mitigation measures the impacts to air quality with respect to dust deposition and human health will not be significant.

A quantitative dispersion modelling assessment was undertaken for the operational phase using the dispersion models CALPUFF and GRAL. Twelve months of meteorological input data representative for the AQIA study area was developed for use in CALPUFF. Diesel exhaust emissions from locomotives and fugitive emissions from coal trains were estimated for projected peak and typical train volumes for the Project in 2040. Ground level concentrations of particulate matter (TSP, PM_{10} and $PM_{2.5}$), NO_2, VOCs, and heavy metals were predicted using CALPUFF and GRAL at nearby sensitive receptors.

Dispersion modelling carried out for the operation of the Project determined that compliance is predicted for all pollutants at all sensitive receptors with and without veneering for typical and peak operations, with the exception of receptor R_898. Receptor R_898 a residential dwelling is located within the permanent footprint of the Project near the western portal of the Toowoomba Range tunnel and adjacent to the proposed western tunnel portal crossing loop. It is expected all sensitive receptors within the permanent disturbance footprint of the Project will be acquired pursuant to the land acquisition process. On the expectation that receptor R_898 is acquired, the operation of the Project is expected to comply with the adopted air quality goals at all remaining sensitive receptors and is not expected to adversely impact environmental values relevant to human receptors, including human health and the aesthetic environment.

Investigation into the deposition of dust emissions at sensitive receptor locations showed that predicted pollutant water concentrations would be compliant with the ADWG, and significantly lower than the adopted air quality goal. Predicted dust deposition levels are also well below the levels which have been shown to impact crops and livestock, and therefore the impact of dust deposition on agricultural uses within the AQIA study area is not anticipated to be significant.

Modelling predictions for the peak and typical volume scenarios have been reviewed to determine if the annual average NO_2 air quality goal of 33 µg/m^3, set for the protection of the environmental value of the health and biodiversity of ecosystems, is exceeded within the AQIA study area. Based on the limited areas outside the Projects' permanent disturbance footprint at which the annual average NO_2 air quality goal is predicted to be exceeded, it is considered unlikely that significant impacts to ecological receptors will occur as a result of the operation of the Project. Therefore, emissions of NO_2 as a result of the operation of the Project are not expected to significantly impact the environmental values of the health and biodiversity of ecosystems.

The impact of odour from agricultural trains using the alignment has been assessed qualitatively using FIDOL factors. Odour emissions from agriculture freight are considered unlikely to result in significant impact to neighbouring sensitive receptors due to the frequency and duration of the odour generating event (train pass-by) and the predominantly rural nature of the AQIA study area.

The AQIA undertaken for the Project showed that with appropriate mitigation in place, the construction and operation of the Project can be managed in a way that air quality impacts to nearby sensitive receptors are maintained at an acceptable level where the nominated environmental values of the air environment are protected. A CEMP will be required for the construction of the Project to manage potential impacts from dust emissions. Mitigation measures for trackout (e.g. water sprays on haul roads) will need to be implemented diligently near urban areas to ensure that emissions are minimised to reduce the risk of impacts.

Tunnel ventilation design has been undertaken for the Toowoomba Range tunnel focusing on maintaining the acceptability of air quality inside the tunnel considering human exposure and locomotive manufacturer requirements for air intake quality. The key pollutants considered were CO, NO_2 and NO. The adopted in-tunnel air quality criteria are consistent with in-tunnel air quality guideline values adopted elsewhere in Australia and internationally and can be achieved with the tunnel design.

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APPENDIX

K

Air Quality Technical Report

Appendix A Meteorological data

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

Appendix A
Meteorological Data

El Niño-Southern Oscillation

For Australia, the El Niño-Southern Oscillation (ENSO) has the strongest effect on year to year climate variability, mostly affecting rainfall and temperature. El Niño incidences represent periods of unusually warm Pacific Ocean conditions along the western coast of South America, which frequently presents as high rainfall events in South America and drought conditions for Australia. Conversely, La Niña periods represent cooler ocean surface temperatures along the western coast of South America and increase the likelihood of drought conditions locally and high rainfall periods in Australia.

The Southern Oscillation Index (SOI), Oceanic Niño Index (ONI), and Multivariate ENSO Index (MEI) are measures that indicate episodes of El Niño and La Niña. Due to differences in methodology each of these aforementioned indices can have slightly differing results. In order to provide a robust investigation of ENSO periods, monthly results from each of these measures have been analysed.

The SOI is defined as the standardized differences in barometric readings from Darwin, Australia, and Tahiti, French Polynesia. Sustained negative SOI values of below -7 often present as El Niño episodes, and positive SOI values above 7 are associated with La Niña episodes. Figure A1 presents the monthly SOI values for the period of 2008 to 2017. Several episodes of El Niño and La Niña have been documented by BoM for this period.

These include the following:

- La Nina periods from 2008 – 2009
- El Nino period from 2009 – 2010
- La Nina period from 2010 – 2012
- El Nino period from 2015 – 2016.

From review of the monthly SOI, three years have been identified as being relatively neutral. These include 2013, 2014, and 2017, which were measured to have seven, five, and eight months of the year to be neutral in terms of the SOI, respectively.

The ONI is the primary indicator utilised by the National Oceanic and Atmospheric Administration (NOAA) in the United States of America (USA) to monitor the strength of ENSO. ONI is based upon the averages in sea surface temperature anomalies in an area of the east-central equatorial Pacific Ocean, which is called the Niño-3.4 region. The index consists of a monthly 3-monthly running mean in order to better isolate variability closely related to the ENSO phenomenon. Threshold values of +/- 0.5°C indicate periods of higher likelihood for El Niño and La Niña, respectively. Figure A1 presents the monthly ONI values for the period of 2008 to 2017.

For the period of 2008 to 2017 the following El Niño and La Niña periods have been identified by the USA National Centers for Environmental Prediction (NCEP) utilising the ONI index and are summarised as follows:

- 2008 – 2009 Weak La Niña
- 2009 – 2010 Moderate El Niño
- 2010 – 2011 Strong La Niña
- 2011 – 2012 Moderate La Niña
- 2014 – 2015 Weak El Niño
- 2015 – 2016 Very Strong El Niño
- 2016 – 2017 Weak La Niña.

The period of 2012 to 2013 and 2013 to 2014 represent the only years that have been neutral in terms of ENSO utilising the ONI measure for the years 2008 to 2017.

The MEI utilises six main observed variables of the tropical Pacific. These five variables are: sea-level pressure, zonal and meridional components of surface wind, sea surface temperature, and total cloudiness fraction of the sky. Negative values of the MEI represent the cold ENSO phase, La Niña, while positive MEI values represent the warm ENSO phase (El Niño). Figure A1 presents the monthly MEI values for the period of 2008 to 2017. From review of the MEI monthly values, significant periods of La Niña are observed for 2008, 2010 to 2011, and El Niño for 2009 and 2014 to 2016. Weaker periods of El Niño in 2012 and the first half of 2017 were recorded. Neutral conditions were observed for 2013 utilising the MEI measure.

Utilising the SEI, ONI, and MEI measures for ENSO (as shown in Figure A1), agreeance can be seen on which years represent periods of El Niño or La Niña. The three indices show that the year 2013 was relatively neutral in terms of ENSO. Therefore, the year 2013 represents an ideal candidate for selection of meteorological period that is relatively unaffected by variances in weather due to ENSO.

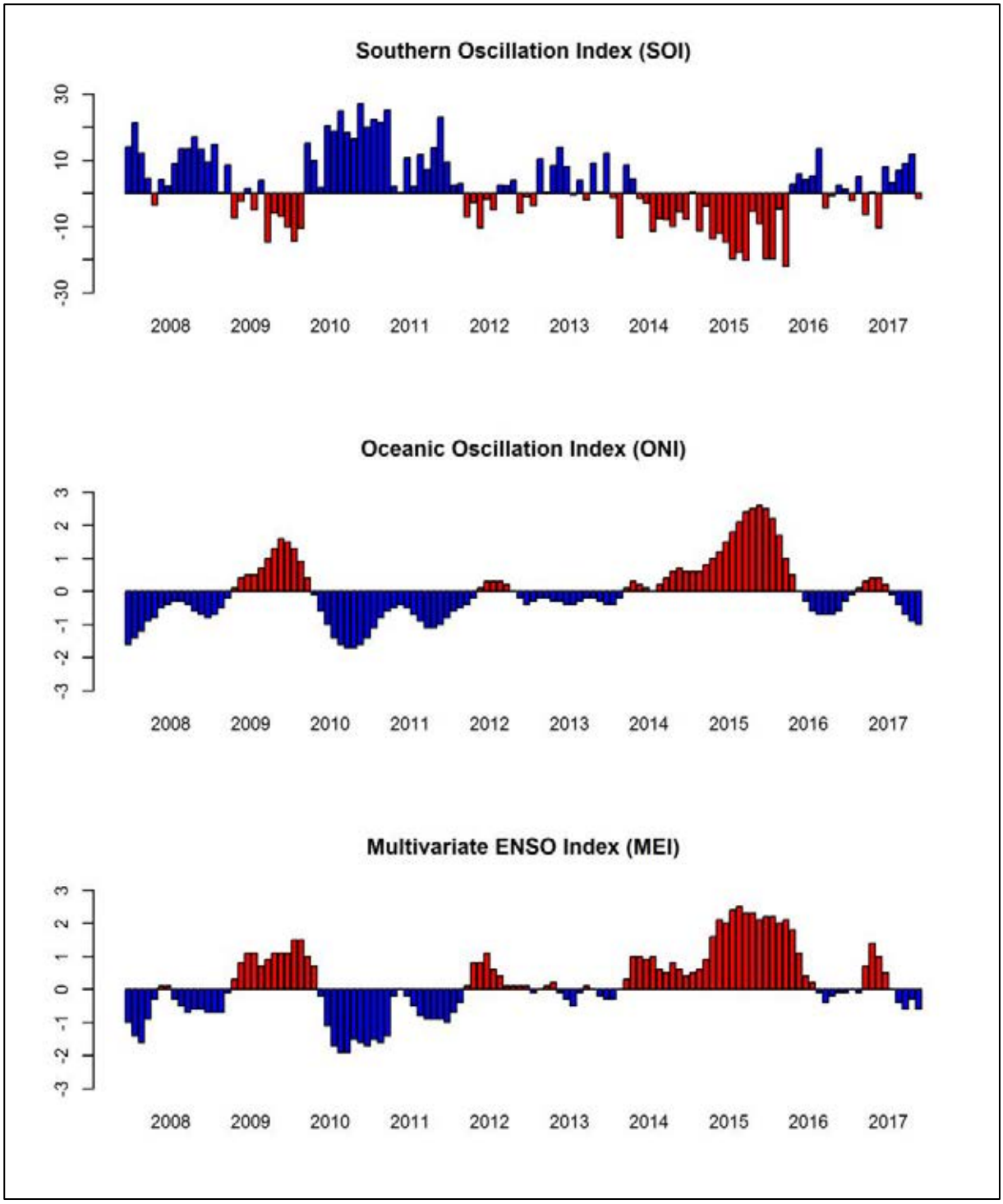


Figure A1 **Comparison of monthly SOI, ONI, and MEI for 2008 to 2017 (red indicating higher likelihood of El Niño conditions, and blue indicating higher likelihood of La Niña conditions)**

University of Queensland Gatton and Toowoomba Airport BoM meteorological data

Table A1 and Table A2 contain a summary of the meteorological data available for the UQ Gatton and Toowoomba Airport BoM monitoring stations respectively. Long term wind roses for the UQ Gatton and Toowoomba Airport BoM monitoring stations are presented in Figure 4.2 and Figure 4.4.

Historical meteorological monitoring data including average temperatures; rainfall; relative humidity; wind speed and wind roses showing the average monthly wind conditions was obtained from the BoM website (*http://www.bom.gov.au/climate/averages/tables)* for both stations. Only 9.00 am data is available for the UQ Gatton BoM station.

For the UQ Gatton BoM station the warmest temperatures occur in summer, with the average maximum temperature recorded in January (31.6°C). July is the coldest month with an average minimum temperature of 6.2°C. Rainfall is highest in January (mean rainfall of 110.1 mm) and lowest in August (mean rainfall of 26.7 mm). The annual average rainfall is 770.2 mm.

For the Toowoomba Airport BoM station the warmest temperatures occur in summer, with the average maximum temperature recorded in January (28.4°C). July is the coldest month with an average minimum temperature of 6.6°C. Rainfall is highest in December (mean rainfall of 104.0 mm) and lowest in April (mean rainfall of 26.2 mm). The annual average rainfall is 718.1 mm.

Wind roses for 2013 from wind speed and direction data outputted from CALMET for locations representative of the UQ Gatton and Toowoomba Airport BoM stations are provided in Figure A2 and Figure A3. The wind roses are consistent with the long-term wind roses for these stations as presented in Figure 4.2 and Figure 4.4.

Wind roses for 2013 from wind speed and direction data outputted from CALMET for the eastern and western tunnel portals of the Toowoomba Range tunnel are presented in Figure A4 and Figure A5. The wind roses for the tunnel portals show that the predominant wind direction at the portals is easterly, consistent with the wind rose for the Toowoomba Airport.

Table A1 Meteorological data from the University of Queensland Gatton BoM station (1913 to 2019)

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Temperature													
Mean maximum temperature (°C)	31.6	30.8	29.6	27.2	23.8	21.1	20.8	22.5	25.6	28.2	30.2	31.3	26.9
Highest temperature (°C)	44.5	45.7	39.5	37.4	33.7	31.5	29.0	37.9	39.5	41.6	42.8	42.0	45.7
Mean minimum temperature (°C)	19.1	19.0	17.3	13.7	10.2	7.6	6.2	6.7	9.5	13.2	16.0	18.1	13.0
Lowest temperature (°C)	11.9	8.3	6.7	3.2	-0.2	-2.4	-5.6	-1.9	0.0	4.3	6.3	8.8	-5.6
Rainfall													
Mean rainfall (mm)	110.1	99.4	79.3	48.6	45.4	41.7	36.4	26.7	34.8	65.0	78.5	99.2	770.2
Highest rainfall (mm)	452.9	307.3	323.4	324.1	443.5	319.6	306.4	94.8	190.5	269.0	321.2	317.0	1241.4
Decile 5 (median) rainfall (mm)	94.9	84.5	72.0	35.9	27.2	25.7	26.2	21.1	27.4	51.8	72.2	82.9	773.1
Mean number of days of rain ≥ 1 mm	8.1	7.6	7.4	4.8	4.6	4.0	3.8	3.6	4.0	6.2	6.6	8.0	68.7
9am conditions													
Mean 9am temperature (°C)	25.8	25.3	24.0	21.1	17.2	14.0	13.0	14.7	18.5	21.9	24.0	25.4	20.4
Mean 9am relative humidity (per cent)	67	70	69	70	73	74	71	66	61	60	61	64	67
Mean 9am cloud cover (oktas)	4.4	4.4	3.8	2.9	2.8	2.7	2.4	2.2	2.4	3.4	3.6	4.0	3.2
Mean 9am wind speed (km/h)	10.2	9.9	9.6	8.9	10.0	11.7	11.6	11.0	10.3	10.8	10.9	10.4	10.4

Table note:

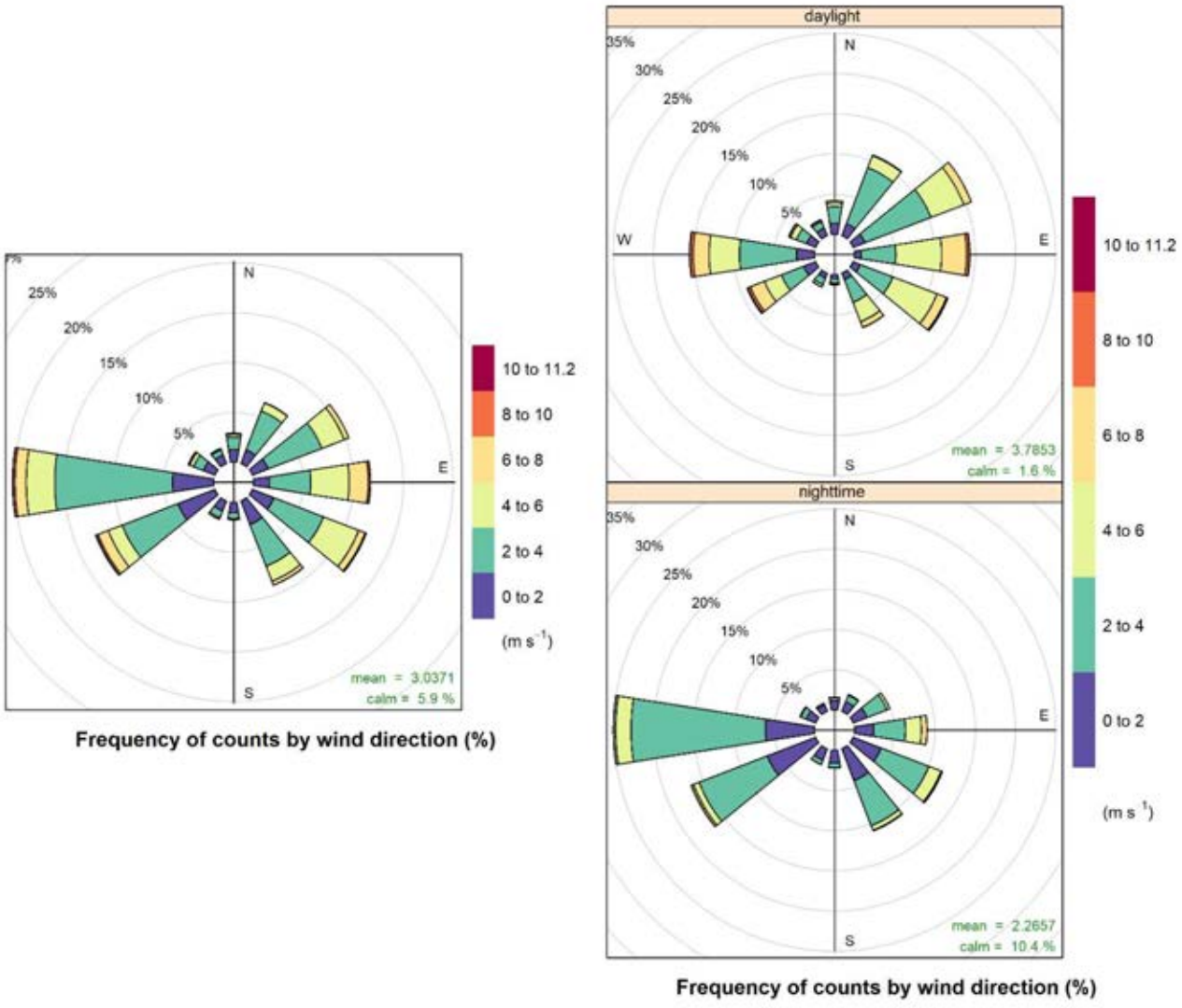
Blue text shows the lowest value for the period, and red text shows the highest value for the period.

Table A2 Meteorological Data from the Toowoomba Airport BoM station (1996 to 2019)

Statistics	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Temperature													
Mean maximum temperature (°C)	28.4	27.6	26.2	23.3	19.9	17	16.8	18.7	22.3	24.5	26.2	27.6	23.2
Highest temperature (°C)	39.5	40.8	36.1	30.3	29.0	27.9	24.5	32.0	34.9	36.4	37.5	38.3	40.8
Mean minimum temperature (°C)	17.6	17.6	16.5	13.4	10	7.6	6.6	7.5	10.6	12.8	14.8	16.6	12.6
Lowest temperature (°C)	12.6	11.7	9.3	3.1	-0.8	-1.5	-1.8	-1.7	1.9	2.7	6.4	9.0	-1.8
Rainfall													
Mean rainfall (mm)	90.6	102.2	86.4	26.2	36.5	36.1	26.6	29.8	35.6	65.1	75.8	104	718.1
Highest rainfall (mm)	416.0	265.2	313.6	69.4	134.2	109.6	105.0	88.4	119.0	150.4	165.2	399.2	1161.0
Decile 5 (median) rainfall (mm)	63.8	79.6	70.2	23.0	27.8	27.6	15.4	21.3	25.0	59.4	72.8	101.6	664.0
Mean number of days of rain ≥ 1 mm	7.0	7.6	7.7	3.9	4.4	4.9	3.5	3.8	4.3	6.3	6.8	7.8	68.0
9am conditions													
Mean 9am temperature (°C)	22.1	21.7	20.5	18.2	14.8	11.9	11.2	12.8	16.3	18.6	20.0	22.0	17.5
Mean 9am relative humidity (per cent)	71	75	73	70	71	76	72	65	62	62	66	67	69
Mean 9am cloud cover (oktas)	5.0	5.3	4.5	4.8	4.1	4.0	3.7	3.4	3.7	3.9	4.9	5.2	4.4
Mean 9am wind speed (km/h)	24.0	23.6	24.6	22.5	19.8	19.7	18.4	20.8	21.1	21.8	21.8	21.9	21.7
3pm conditions													
Mean 3pm temperature (°C)	26.8	25.9	24.9	22.1	18.8	15.9	15.5	17.5	21.1	23.5	24.2	26.1	21.9
Mean 3pm relative humidity (per cent)	51	56	52	50	51	54	50	42	40	40	48	49	49
Mean 3pm cloud cover (oktas)	5.0	5.3	4.5	4.8	4.1	4.0	3.7	3.4	3.7	3.9	4.9	5.2	4.4
Mean 3pm wind speed (km/h)	23.0	23.2	22.5	21.3	20.3	21.5	21.3	21.8	21.6	21.4	21.7	21.9	21.8

Table note:

Blue text shows the lowest value for the period, and red text shows the highest value for the period.



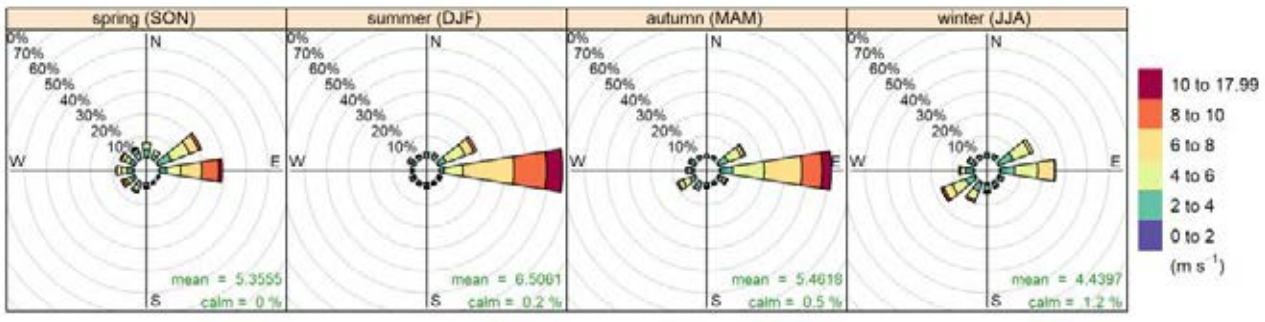


Figure A2 **CALMET Generated – University of Queensland Gatton BoM station wind roses for 2013: all hours (top left); daylight hours (top right); and seasons (bottom)**

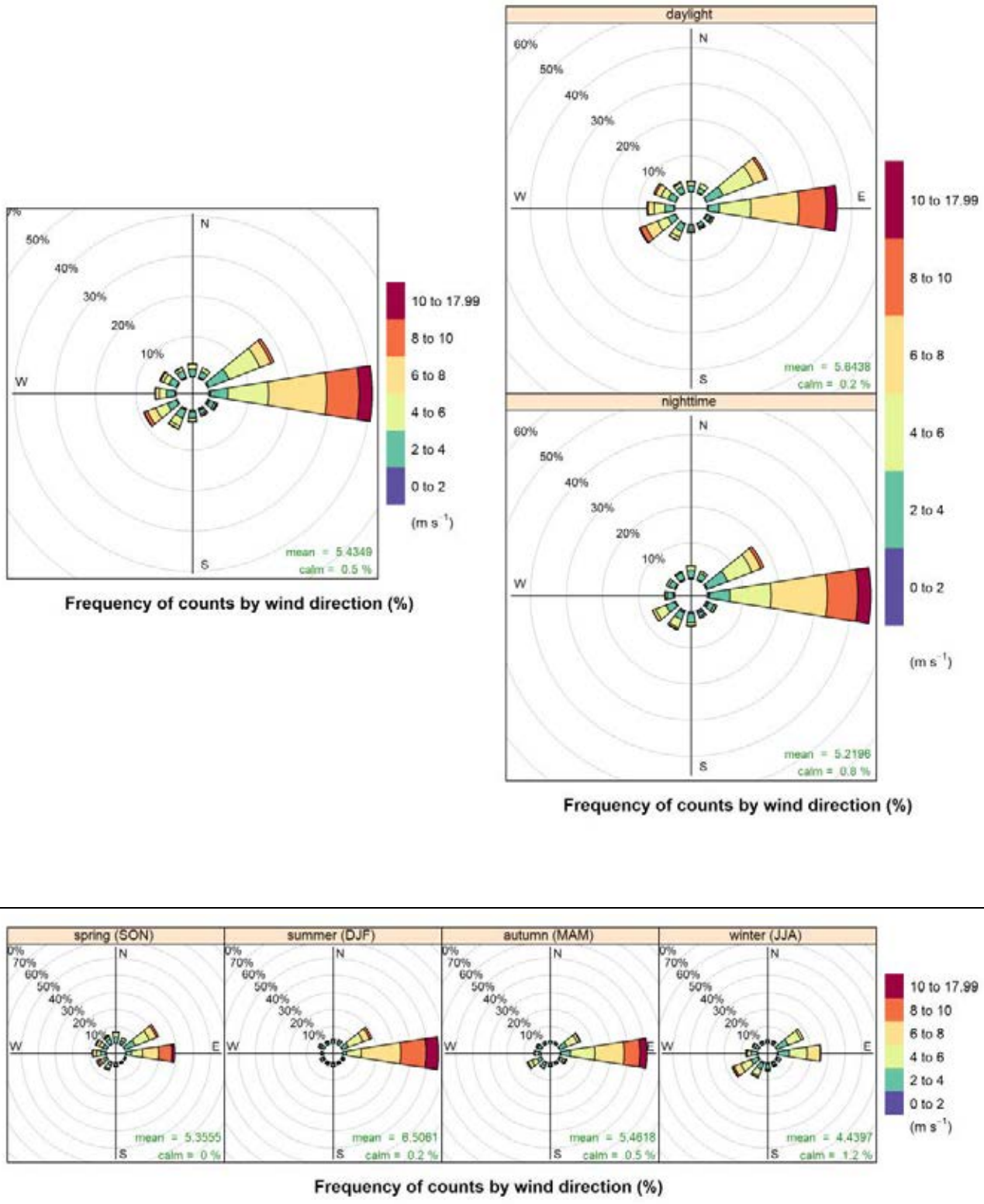
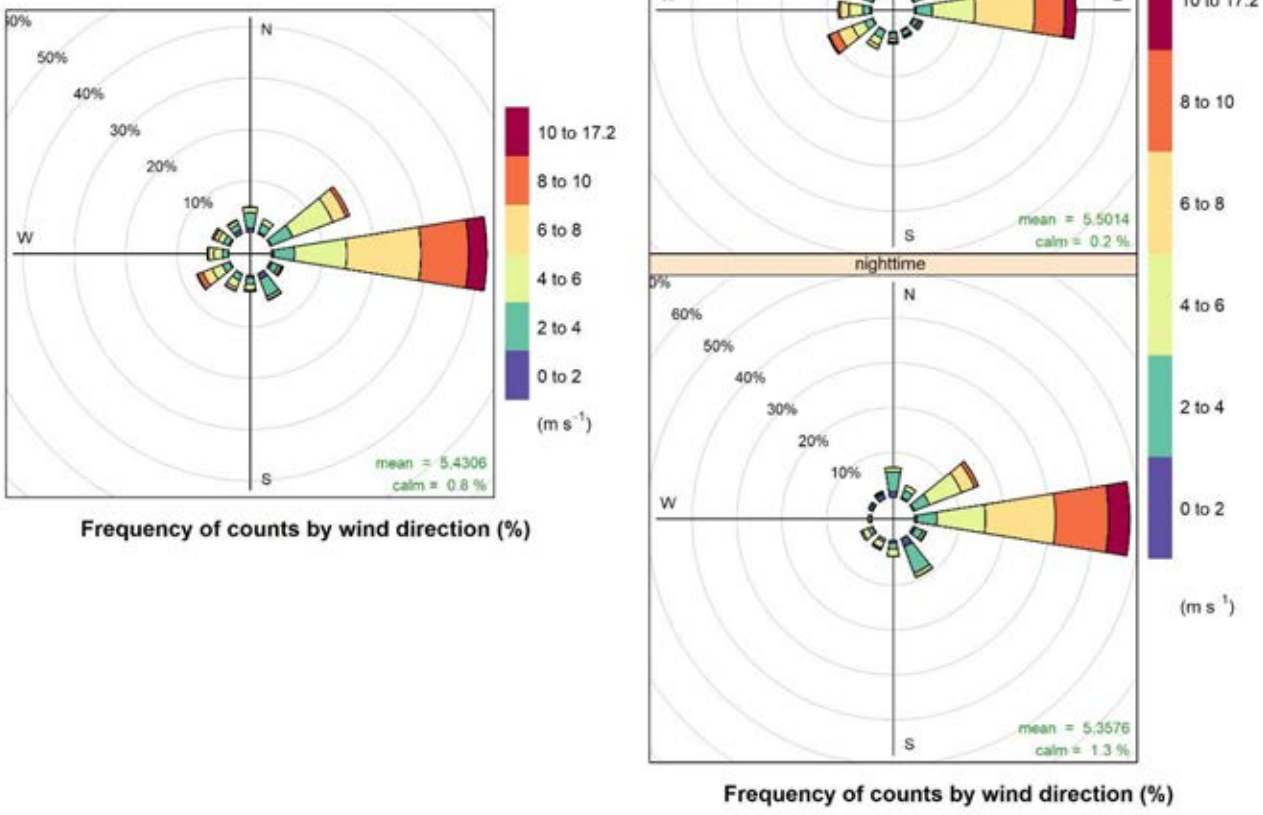


Figure A3 **CALMET Generated –Toowoomba Airport BoM station wind roses for 2013: all hours (top left); daylight hours (top right); and seasons (bottom)**



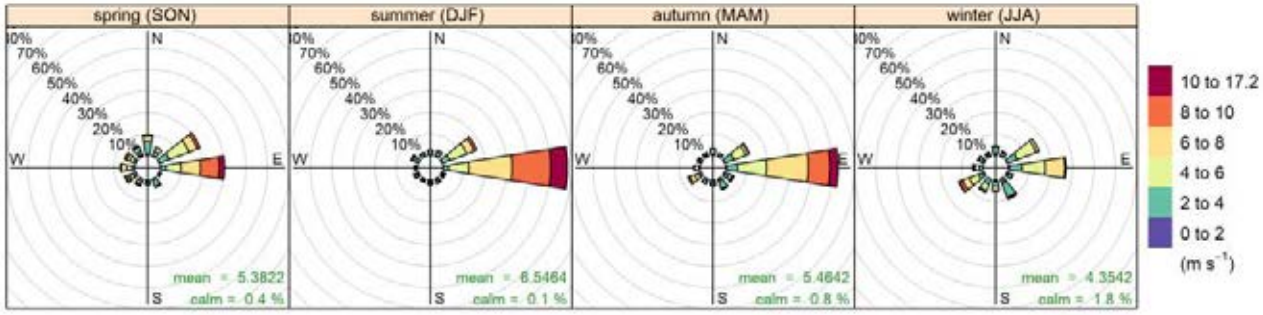
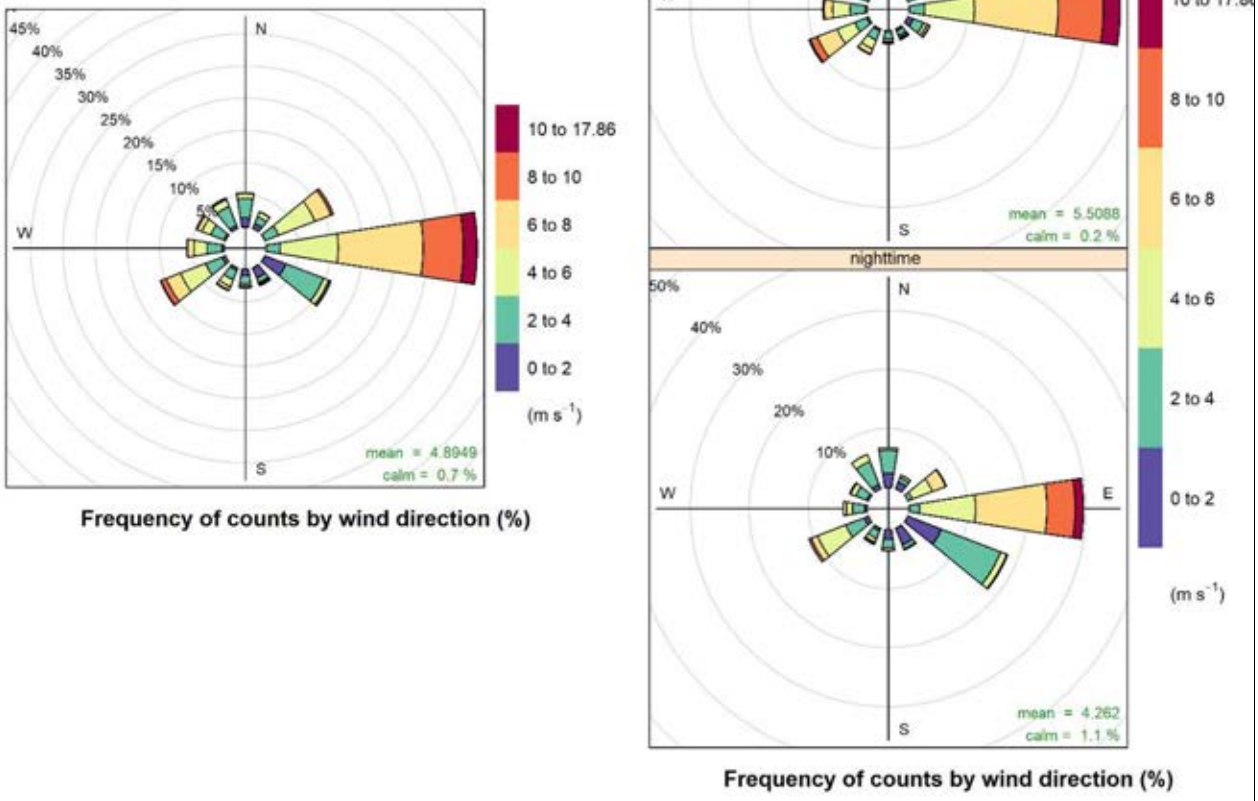


Figure A4 **CALMET Generated – Western tunnel portal of Toowoomba Range tunnel wind roses for 2013: all hours (top left); daylight hours (top right); and seasons (bottom)**



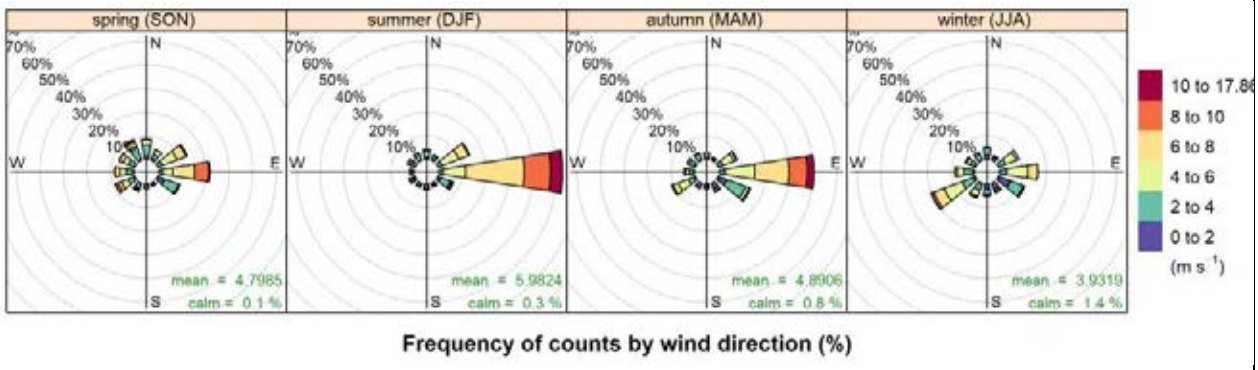


Figure A5 **CALMET Generated – Eastern tunnel portal of Toowoomba Range tunnel wind roses for 2013: all hours (top left); daylight hours (top right); and seasons (bottom)**

Atmospheric stability

Stability is a measure of the convective properties of a parcel of air. Stable conditions occur when convective processes are low, while unstable conditions are associated with stronger convective processes, which are associated with potentially rapid changes in temperature. Stable atmospheres occur when a parcel of air is cooler than the surrounding environment, so the parcel of air (and any pollution within it) sinks. Conversely, unstable atmospheres occur when a parcel of air is warmer than the surrounding environment, making the parcel of air buoyant and, subsequently, leading to the parcel of air rising.

Stability is commonly explained using Pasquill-Gifford A – F stability class designations Classes A, B and C represent unstable conditions, with class A representing very unstable conditions and C representing slightly unstable conditions. Class D stability corresponds to neutral conditions, which are typical during overcast days and nights. Classes E and F correspond to slightly stable and stable conditions respectively, which occur at night.

Stability class data extracted from the CALMET files for locations representing the UQ Gatton and Toowoomba Airport BoM stations, and the eastern and western tunnel portals of the Toowoomba Range tunnel is presented in Figure A6 to Figure A9.

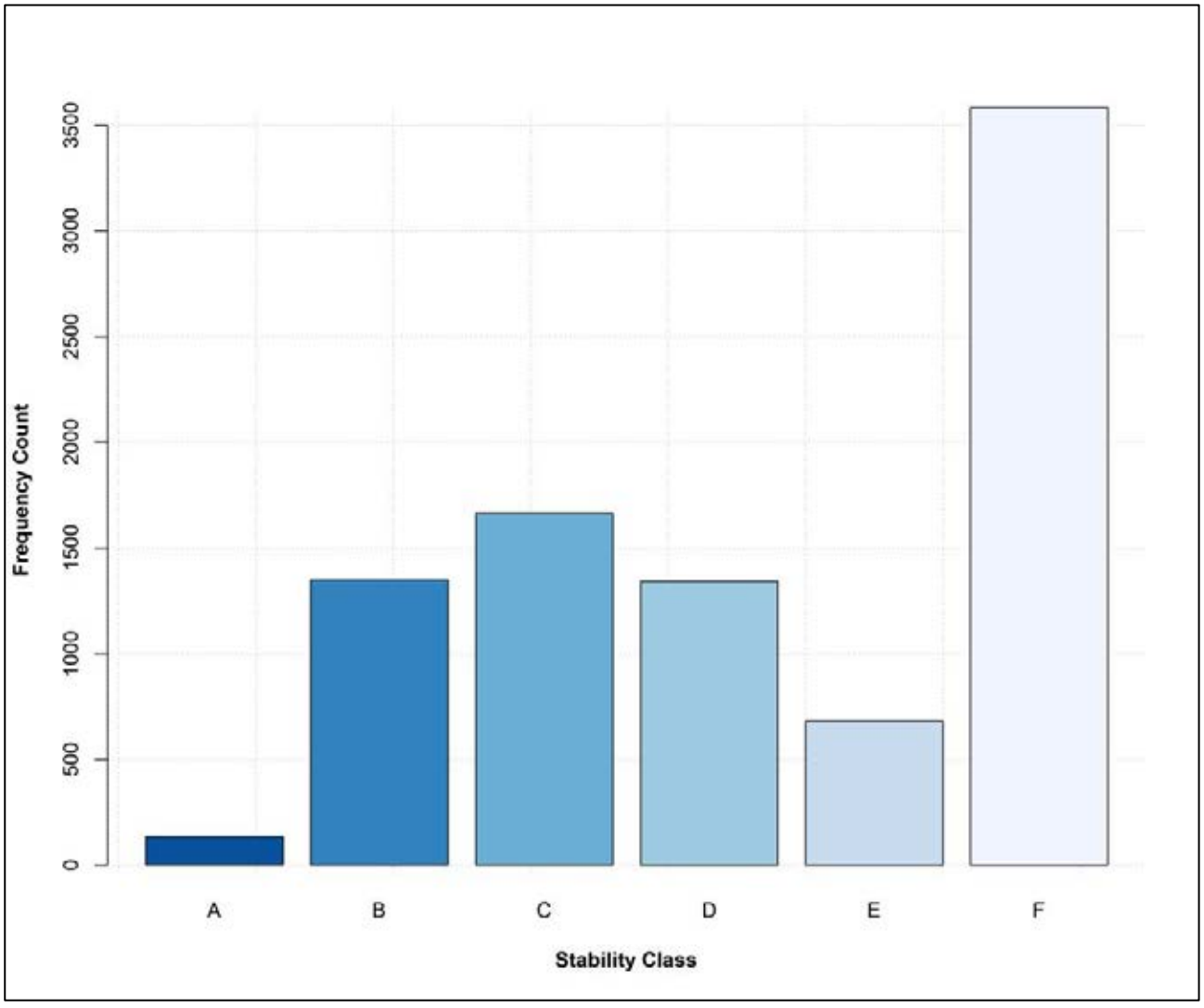


Figure A6 **Hourly stability class frequency from CALMET generated for University of Queensland Gatton Bureau of Meteorology station (2013)**

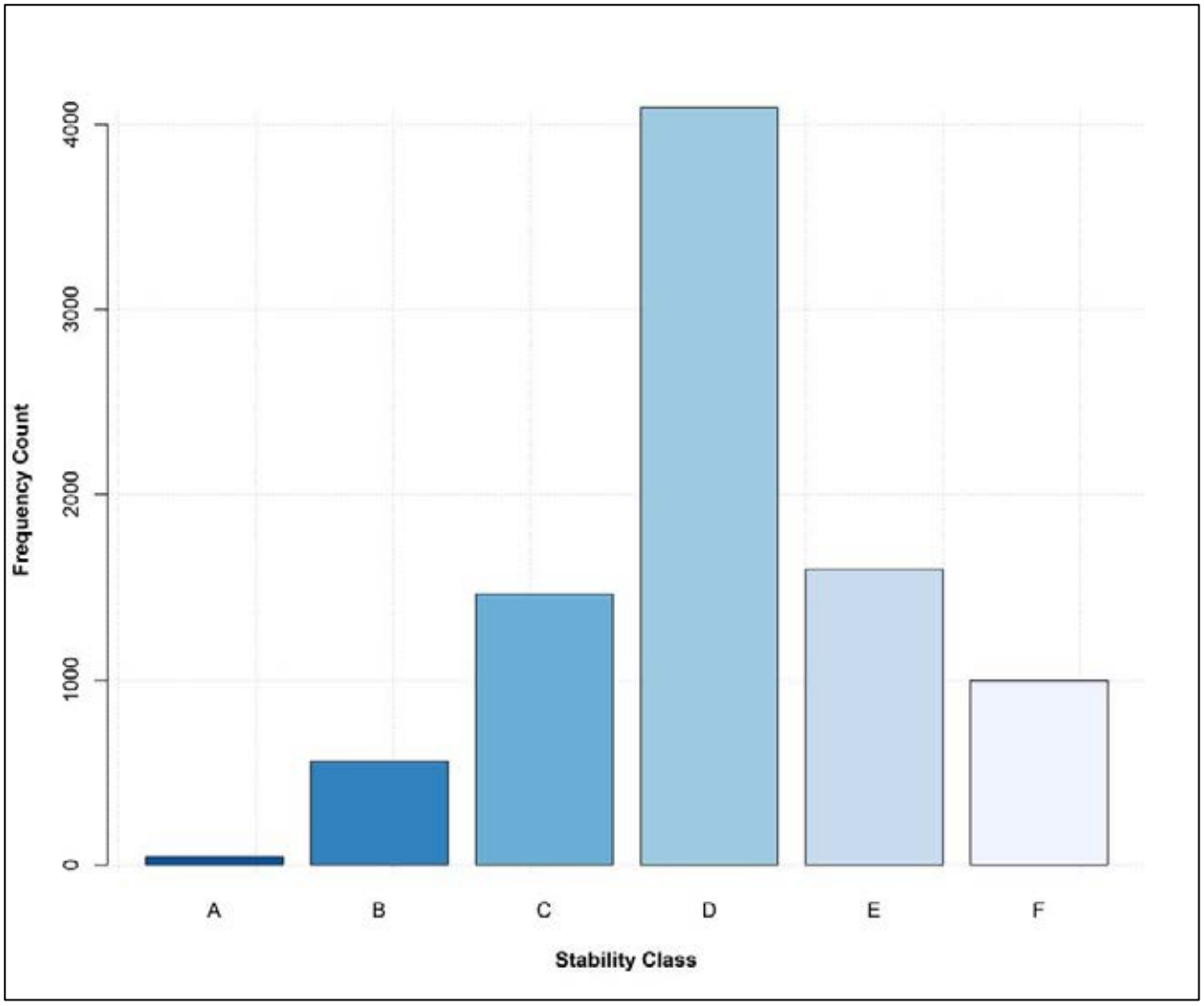


Figure A7 **Hourly stability class frequency from CALMET generated for Toowoomba Airport BoM station (2013)**

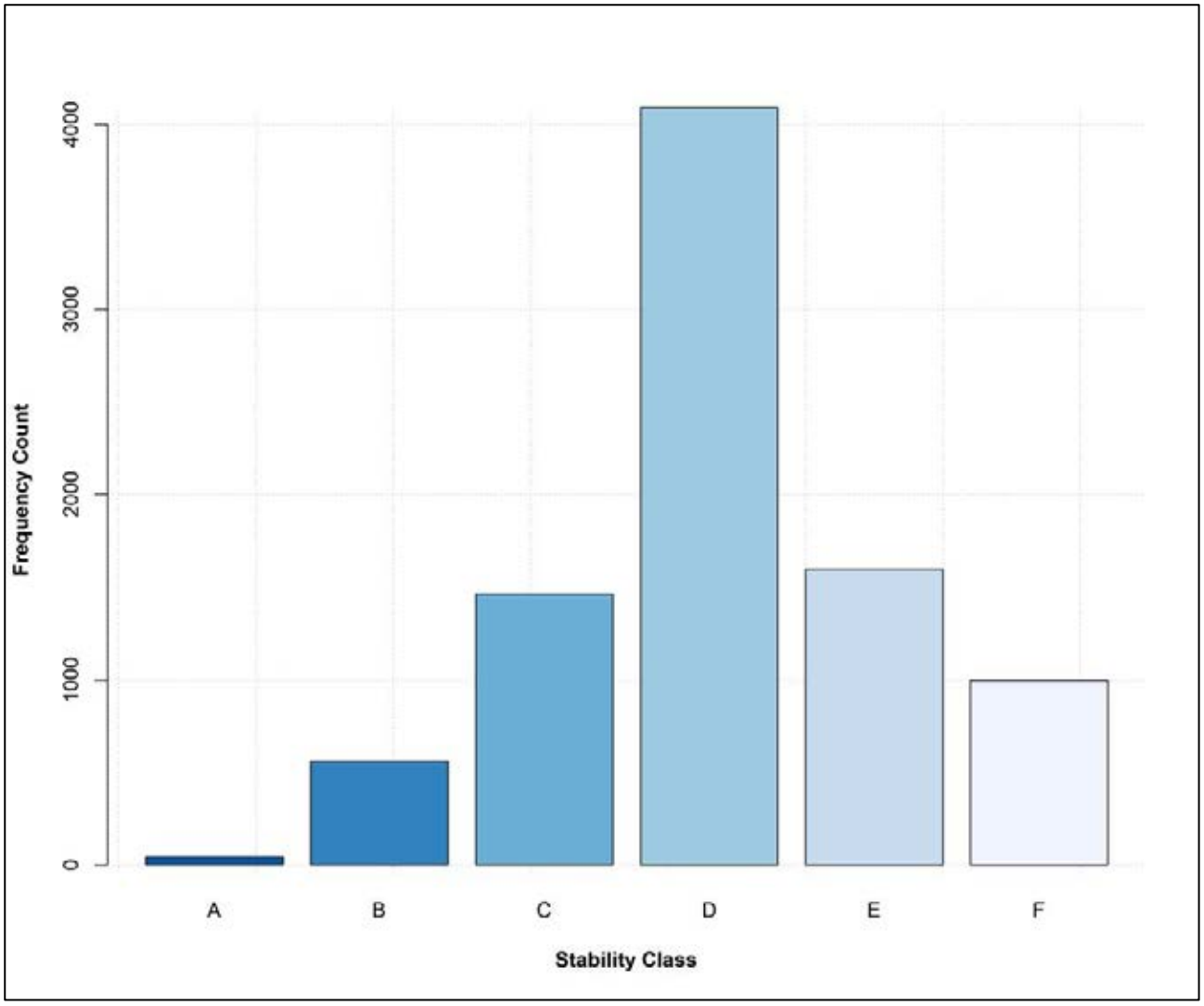


Figure A8 **Hourly stability class frequency from CALMET generated for the western tunnel portal of the Toowoomba Range tunnel (2013)**

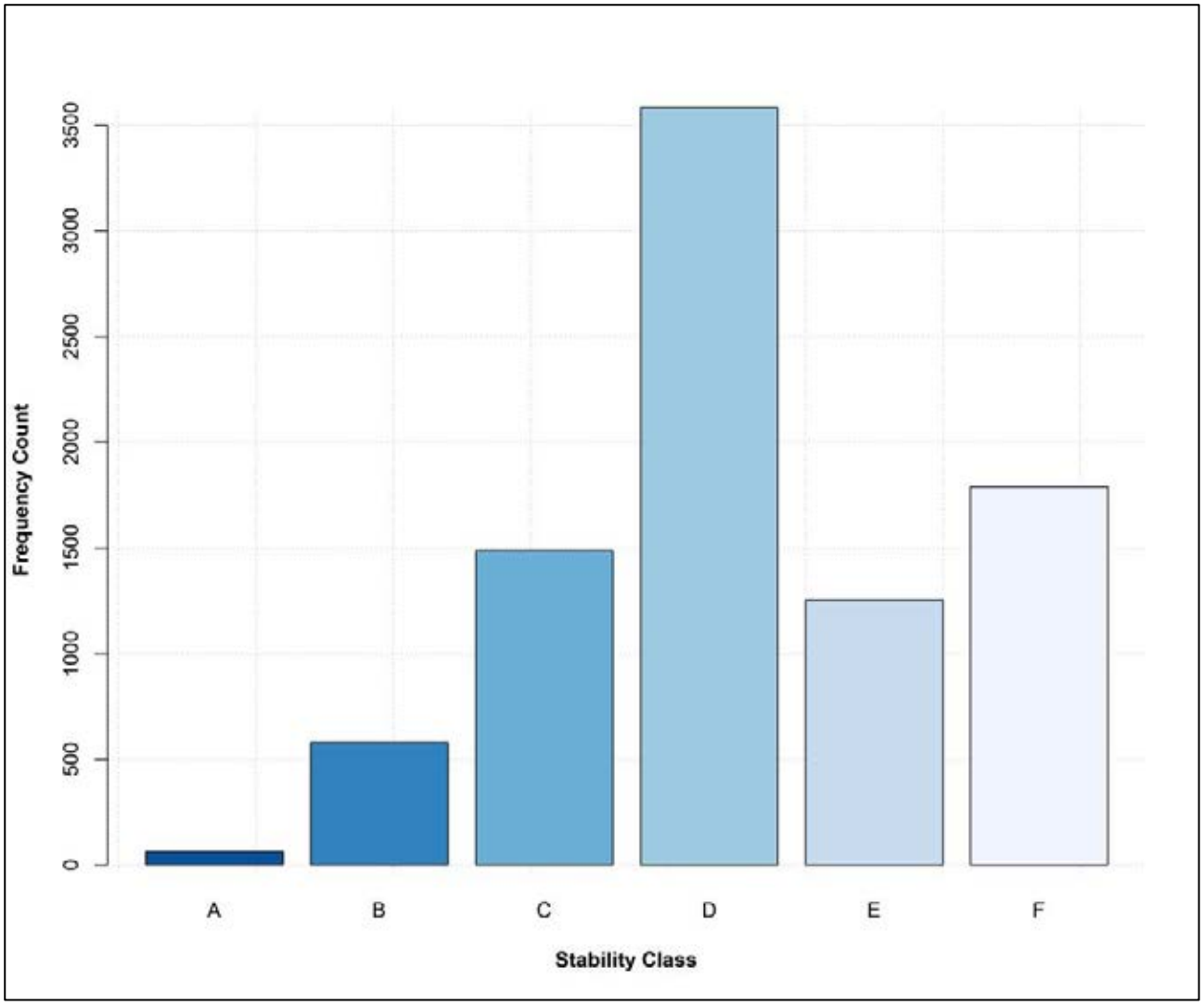


Figure A9 **Hourly stability class frequency from CALMET generated for the eastern tunnel portal of the Toowoomba Range tunnel (2013)**

Mixing height

Mixing height is estimated within CALMET for stable and convective conditions (respectively), with a minimum mixing height of 50 m. Figure A10 to Figure A13 present mixing height statistics by hour of day as generated by CALMET for the UQ Gatton and Toowoomba Airport BoM stations, and the eastern and western tunnel portals of the Toowoomba Range tunnel. These results are consistent with general atmospheric processes that show increased vertical mixing with the progression of the day, as well as lower mixing heights during night time. In addition, peak mixing heights are consistent with typical ranges.

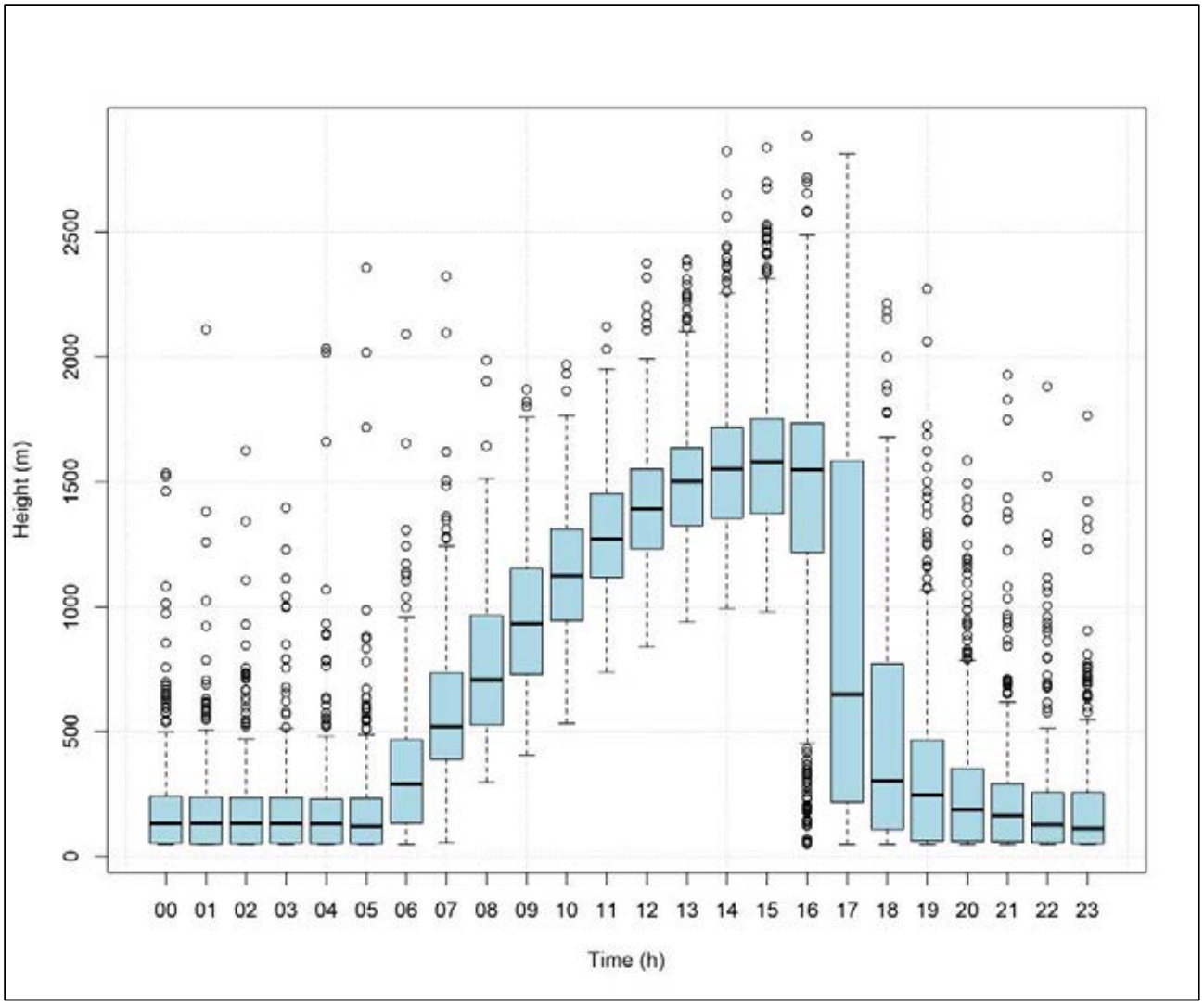


Figure A10 **Mixing height statistics by hour of the day generated by CALMET for the University of Queensland Gatton BoM station**

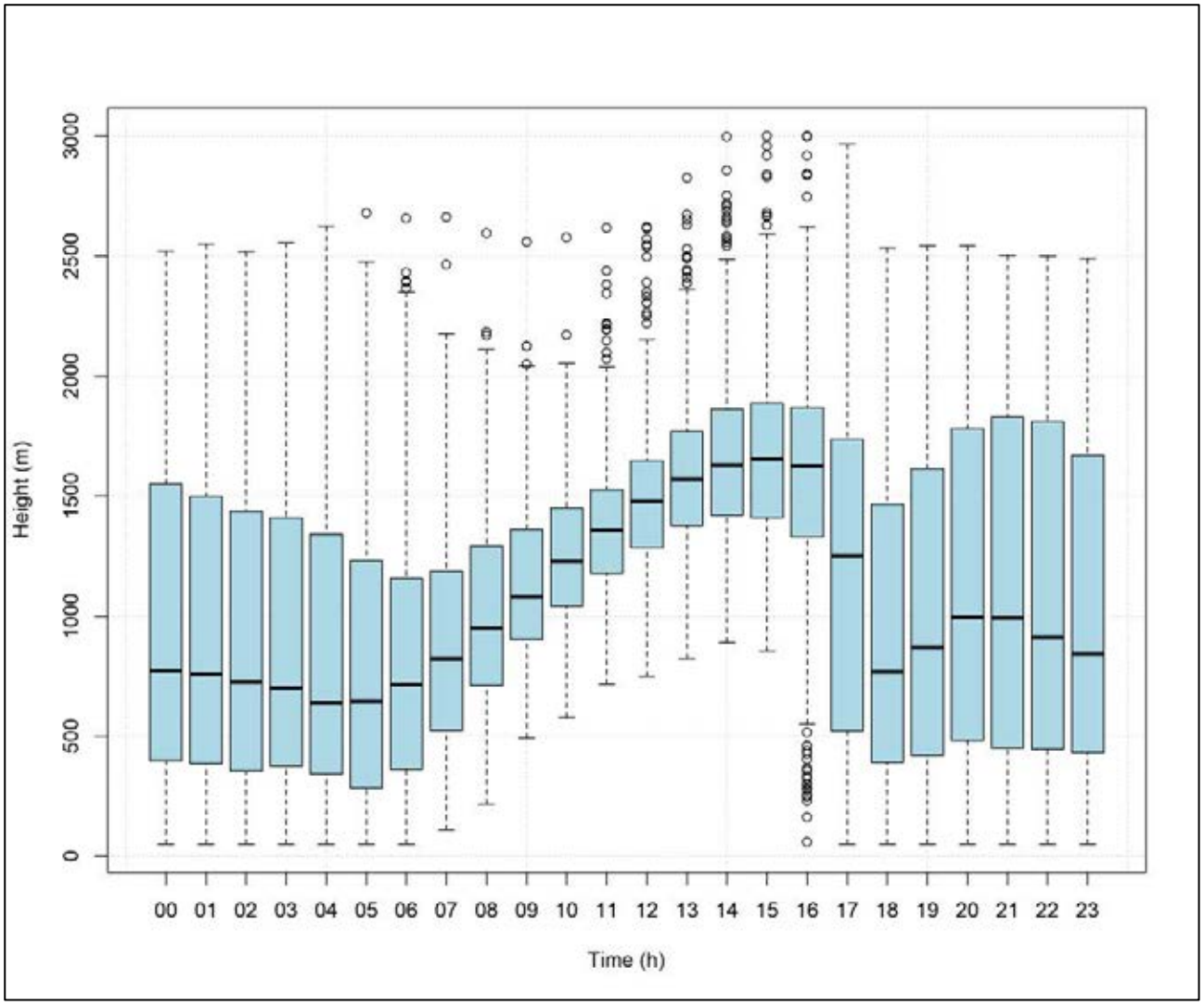


Figure A11 **Mixing height statistics by hour of the day generated by CALMET for the Toowoomba Airport BoM station**

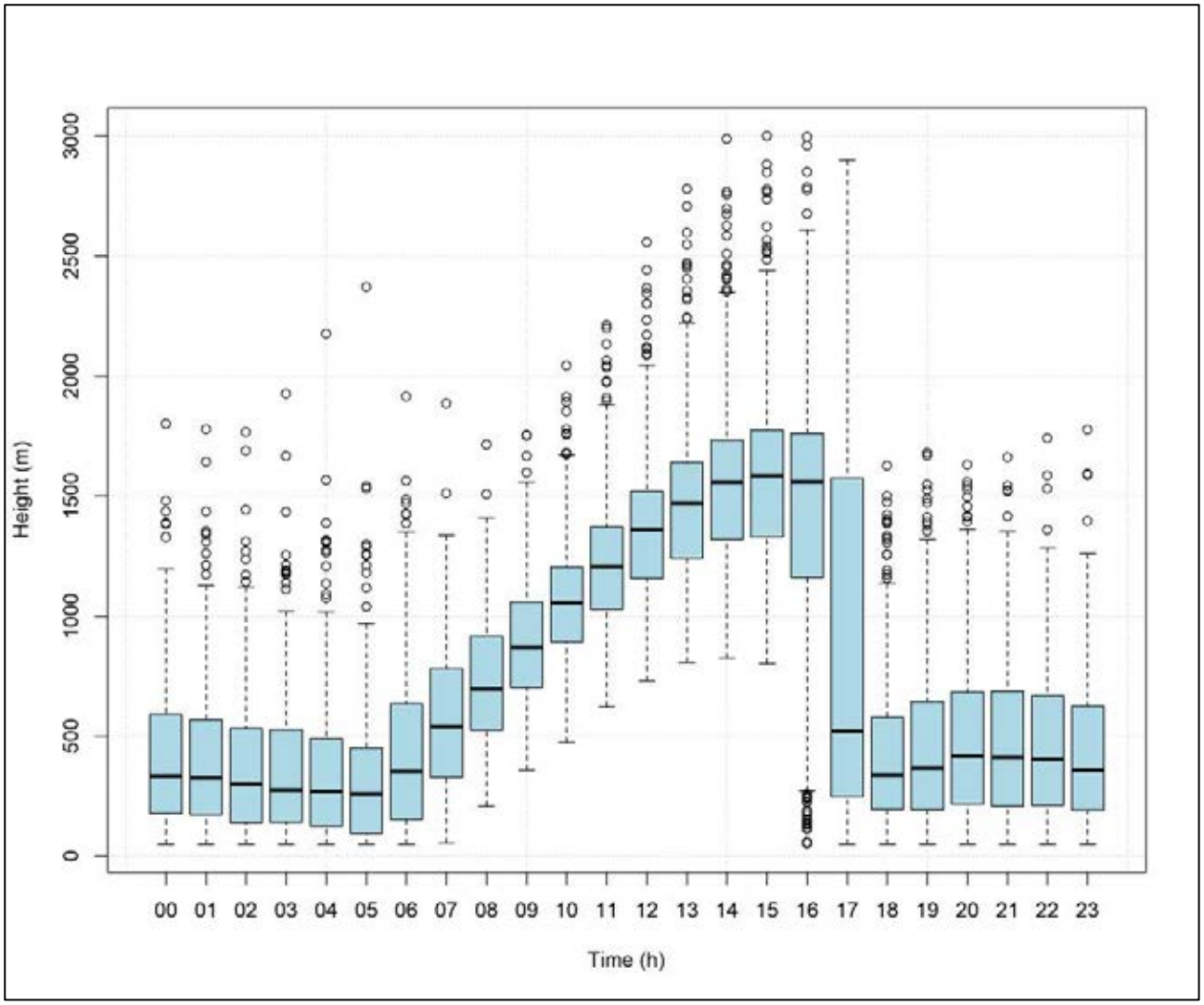


Figure A12 **Mixing height statistics by hour of the day generated by CALMET for the western tunnel portal of the Toowoomba Range tunnel**

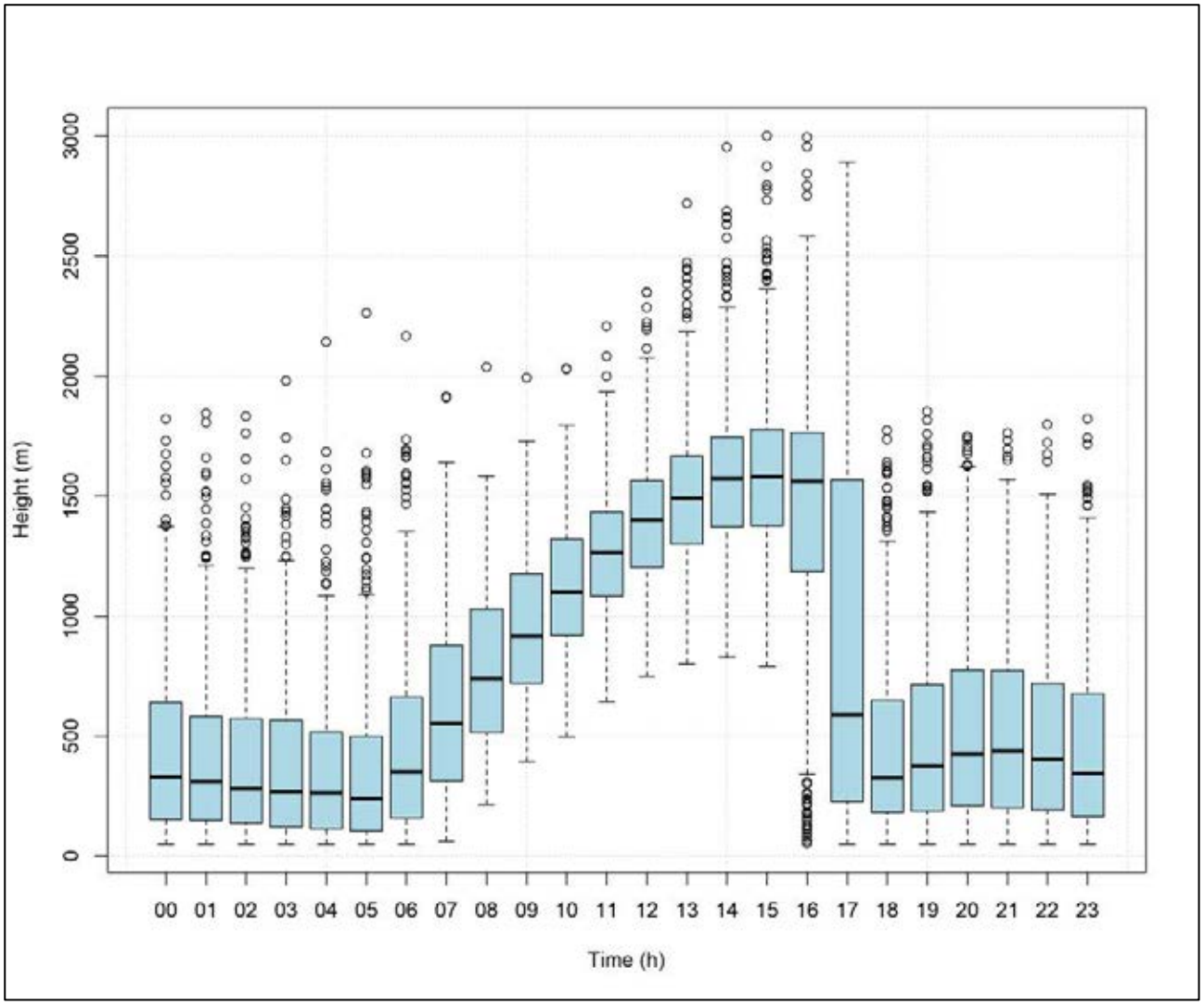


Figure A13 **Mixing height statistics by hour of the day generated by CALMET for the eastern tunnel portal of the Toowoomba Range tunnel**

APPENDIX

K

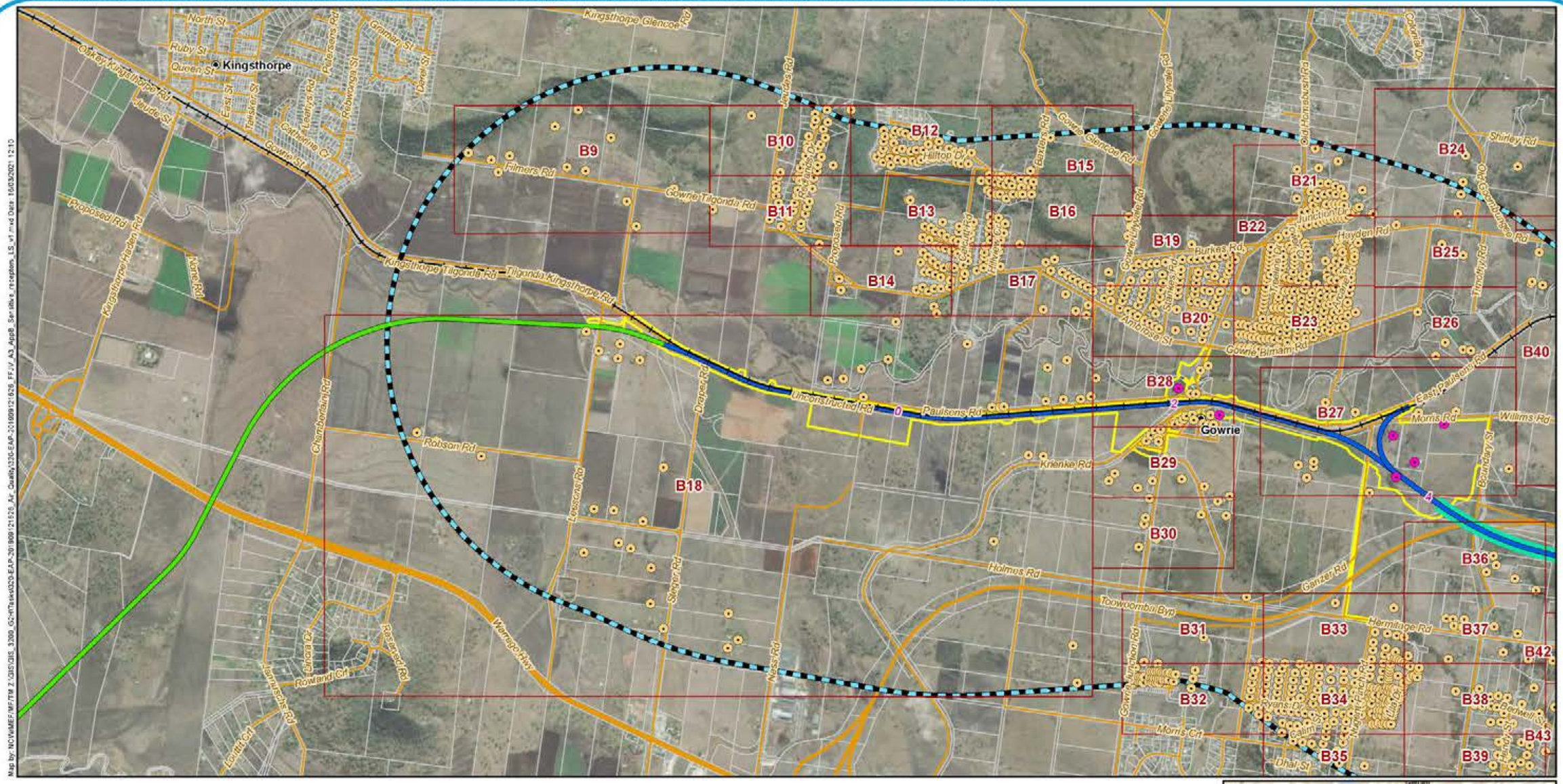
Air Quality Technical Report

Appendix B Detailed sensitive receptor maps

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

Appendix B
Detailed Sensitive Receptor Maps

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- B2G project alignment
- G2H project alignment
- Existing rail
- Major roads
- Minor roads
- Tunnel
- Air Quality study area
- EIS disturbance footprint
- Cadastre
- Areas mapped separately



A3 scale: 1:30,000

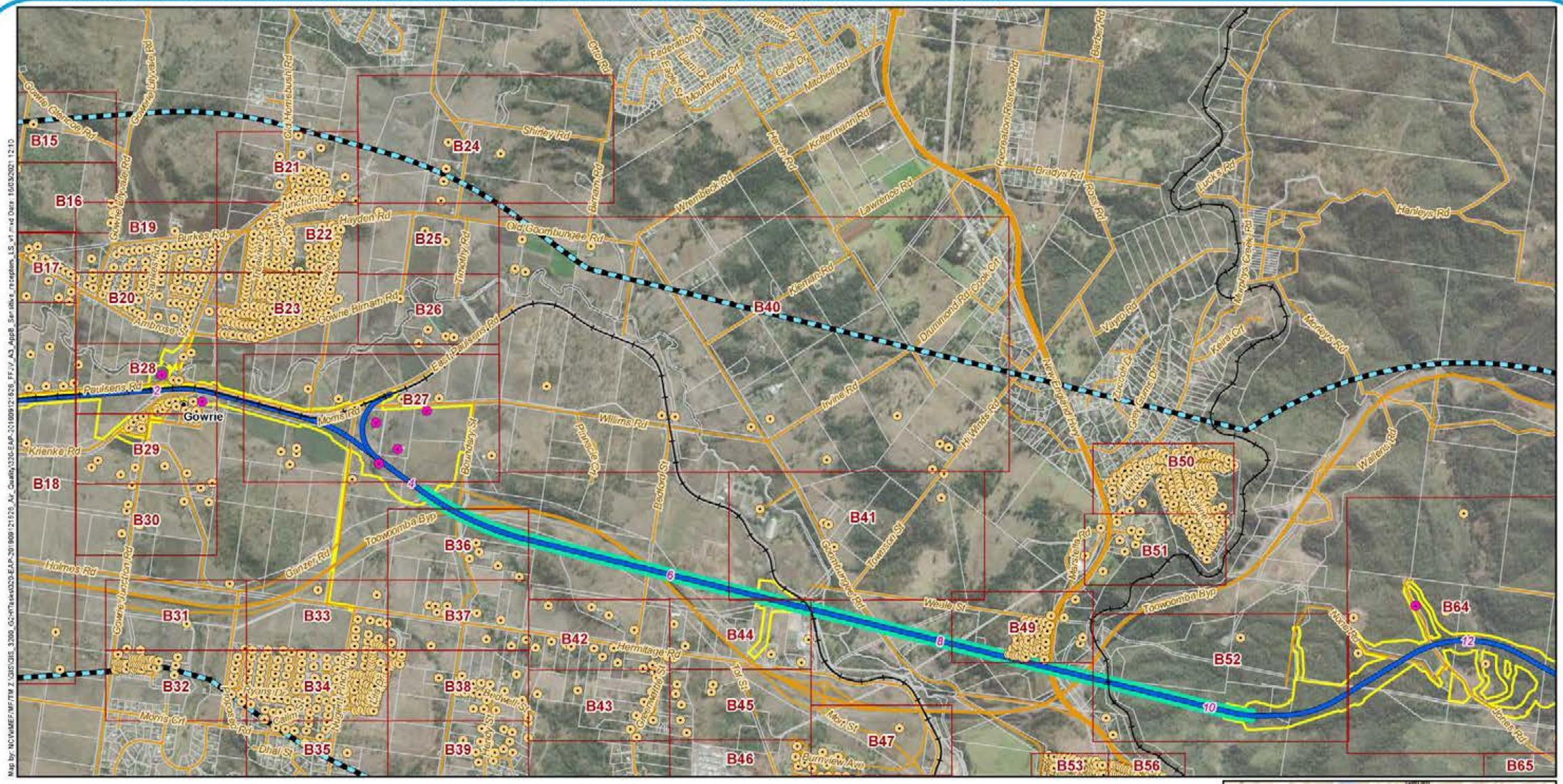
0 0.2 0.4 0.6 0.8 1km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B1: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Existing rail
- Major roads
- Minor roads
- Tunnel
- Air Quality study area
- EIS disturbance footprint
- Cadastre
- Areas mapped separately

A3 scale: 1:30,000

0 0.2 0.4 0.6 0.8 1km

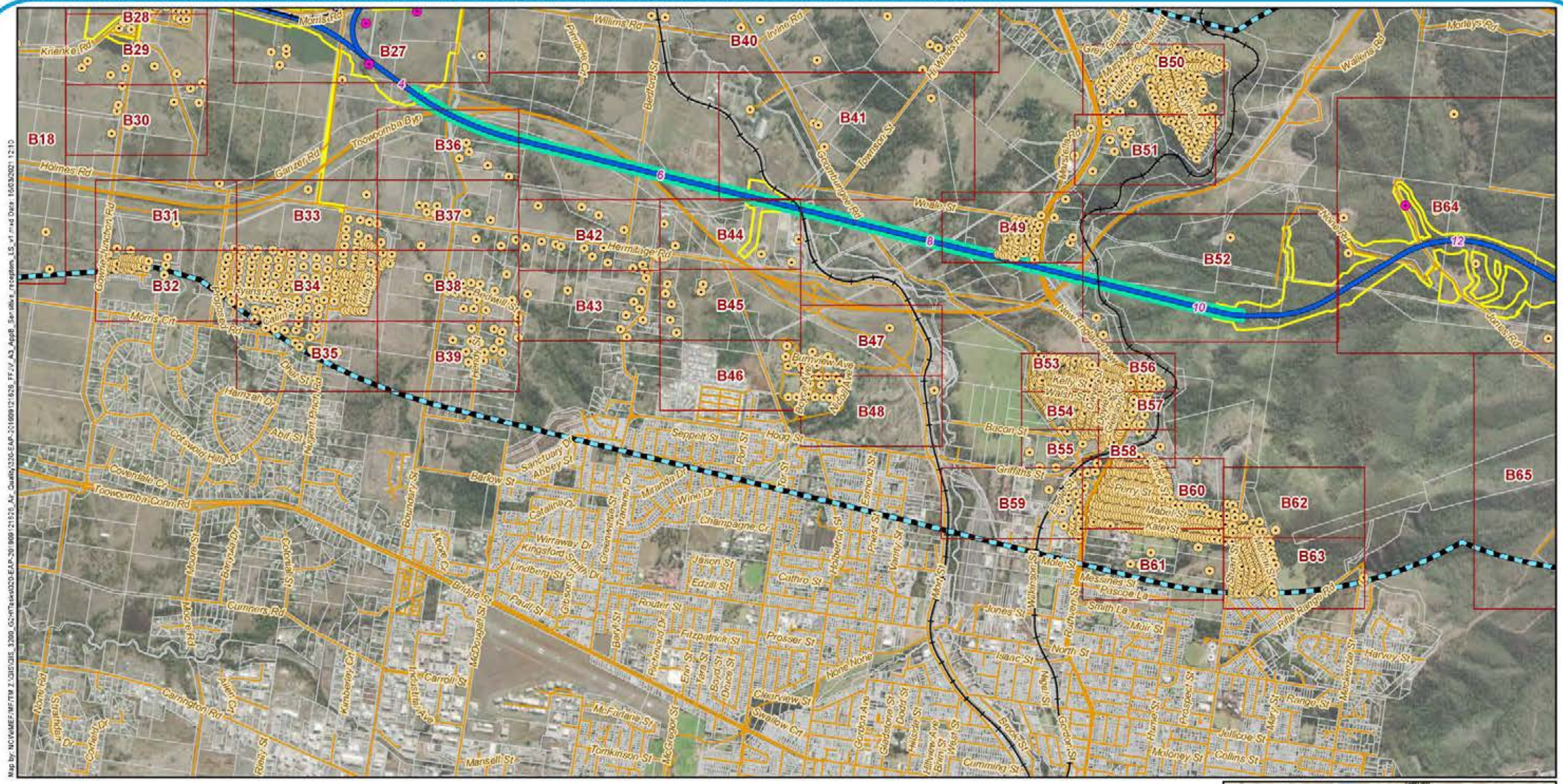
Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B2: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community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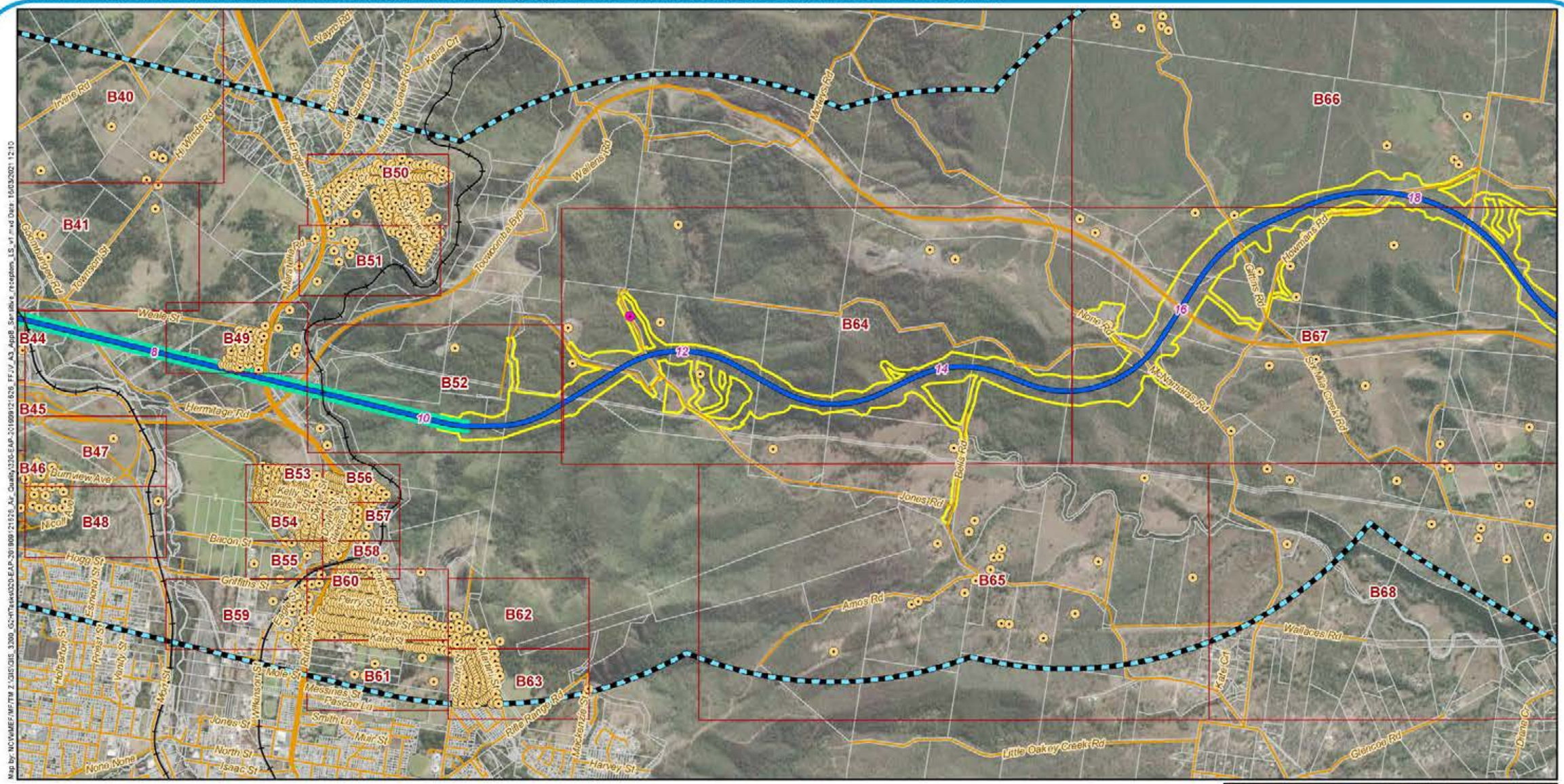
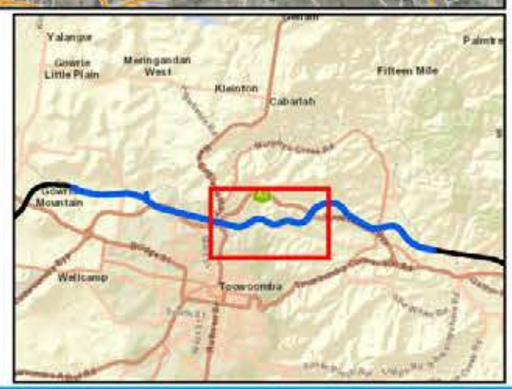
Toowoomba Bypass
Warrego Hwy
New England Hwy
Herries St
Hume St
Ruthven St
Margaret St
Russell St
Bridge St
Boundary St
Moore St
Clifford St
Hodgen St
Lindsay St
Mort St
Mackenzie St
Harvey St
Range St
Rifle Range Rd
Jellicoe St
Collins St
Moloney St
Cumming St
Gordon St
Brook St
Neville St
Isaac St
North St
Muir St
Smith La
Pascoe La
Messines St
Mabel St
Kate St
Perry St
Griffiths St
Bacon St
Hoop St
Seppelt St
Barlow St
Clearview St
Swallow Ct
Prosser St
Jason St
Edzell St
Cathro St
Router St
Paull St
Gibson St
Fitzpatrick St
Richmond Dr
Bell St
Erin St
Boyd St
Dorse St
Tara St
McDonnell St
McFarlane St
Tomkinson St
McGregor St
Mansell St
Carroll St
Industrial Ave
Wimberley Ct
Allen Ct
Carrington Rd
Corfield St
Stanley St
Nome Rd
Riley St
Clunners Rd
Moore Rd
Toowoomba Conn Rd
Coolabunia Rd
Gowrie Junction Rd
Holmes Rd
Ganzen Rd
Morris Rd
Williams Rd
Irvine Rd
Hj Wirths Rd
Pinnacle Ct
Bedford St
Townson St
Gowrie Mountain Rd
Wieale St
Hermitage Rd
Ryans Dr
Calirri
Morris Crt
Jessel Rd
Landwell St
Burnview Ave
Nicol Ave
Bell Ave
Harnzah Dr
Abril St
Nugent Lynch Rd
Gowrie Hills Dr
Coolabunia Hills Dr
Covendale Cr
Sanctuary Dr
Abbey St
Catalina Dr
Green Ventle St
Thornview Dr
Miranda Dr
Wine Dr
Champagne Cr
Wirraway Dr
Kingsford Smith Dr
Lindberg St
Edmond St
Port St
Priest St
Vanny St
Hobbertan St
Mary St
Wilkinson St
Rathmore St
Gladstone St
Hillside St
Hillview Ave
Brim West St
Gowrie Junction Rd
Morleys Rd
Wallens Rd
Grey Gums Dr
Murphys Creek Rd
Tallegalla Cr
Lucas Dr
Nevada Rd
Jones St
Yarraman Rd
Kelly St
Walsh St
Lee St
Ryan St
Mary St
Kate St
Mabel St
Perry St
Griffiths St
Bacon St
Hoop St
Seppelt St
Barlow St
Clearview St
Swallow Ct
Prosser St
Jason St
Edzell St
Cathro St
Router St
Paull St
Gibson St
Fitzpatrick St
Richmond Dr
Bell St
Erin St
Boyd St
Dorse St
Tara St
McDonnell St
McFarlane St
Tomkinson St
McGregor St
Mansell St
Carroll St
Industrial Ave
Wimberley Ct
Allen Ct
Carrington Rd
Corfield St
Stanley St
Nome Rd
Riley St
Clunners Rd
Moore Rd
Toowoomba Conn Rd
Coolabunia Rd
Gowrie Junction Rd
Holmes Rd
Ganzen Rd
Morris Rd
Williams Rd
Irvine Rd
Hj Wirths Rd
Pinnacle Ct
Bedford St
Townson St
Gowrie Mountain Rd
Wieale St
Hermitage Rd
Ryans Dr
Calirri
Morris Crt
Jessel Rd
Landwell St
Burnview Ave
Nicol Ave
Bell Ave
Harnzah Dr
Abril St
Nugent Lynch Rd
Gowrie Hills Dr
Coolabunia Hills Dr
Covendale Cr
Sanctuary Dr
Abbey St
Catalina Dr
Green Ventle St
Thornview Dr
Miranda Dr
Wine Dr
Champagne Cr
Wirraway Dr
Kingsford Smith Dr
Lindberg St
Edmond St
Port St
Priest St
Vanny St
Hobbertan St
Mary St
Wilkinson St
Rathmore St
Gladstone St
Hillside St
Hillview Ave
Brim West St
Gordon Ave
Gordon St
Brook St
Neville St
Isaac St
North St
Muir St
Smith La
Pascoe La
Messines St
Mabel St
Kate

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Existing rail
- Major roads
- Minor roads
- Tunnel
- Air Quality study area
- EIS disturbance footprint
- Cadastre
- Areas mapped separately



A3 scale: 1:30,000

0 0.2 0.4 0.6 0.8 1km

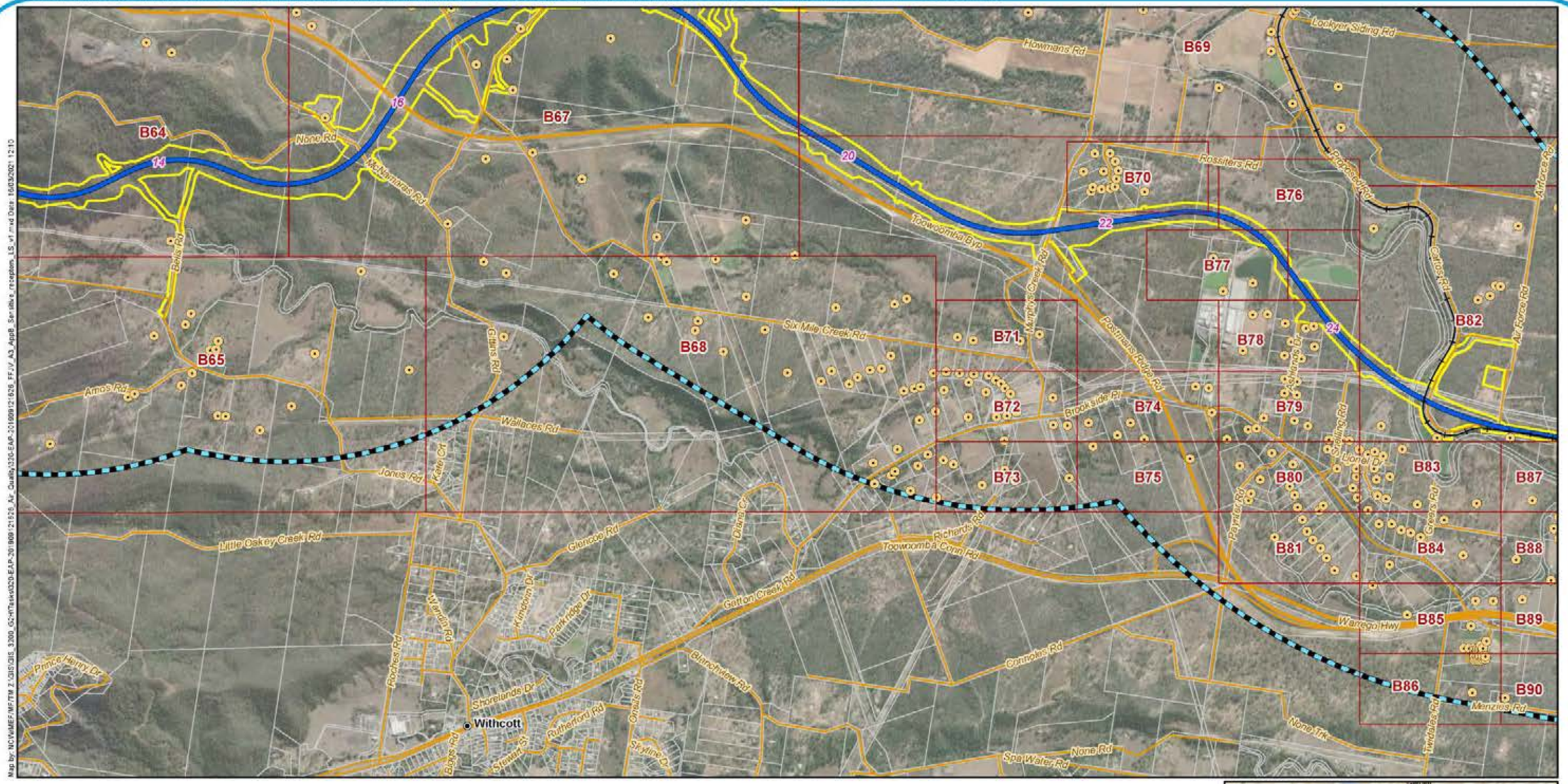
Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B4: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Existing rail
- Major roads
- Minor roads
- Air Quality study area
- EIS disturbance footprint
- Cadastre
- Areas mapped separately



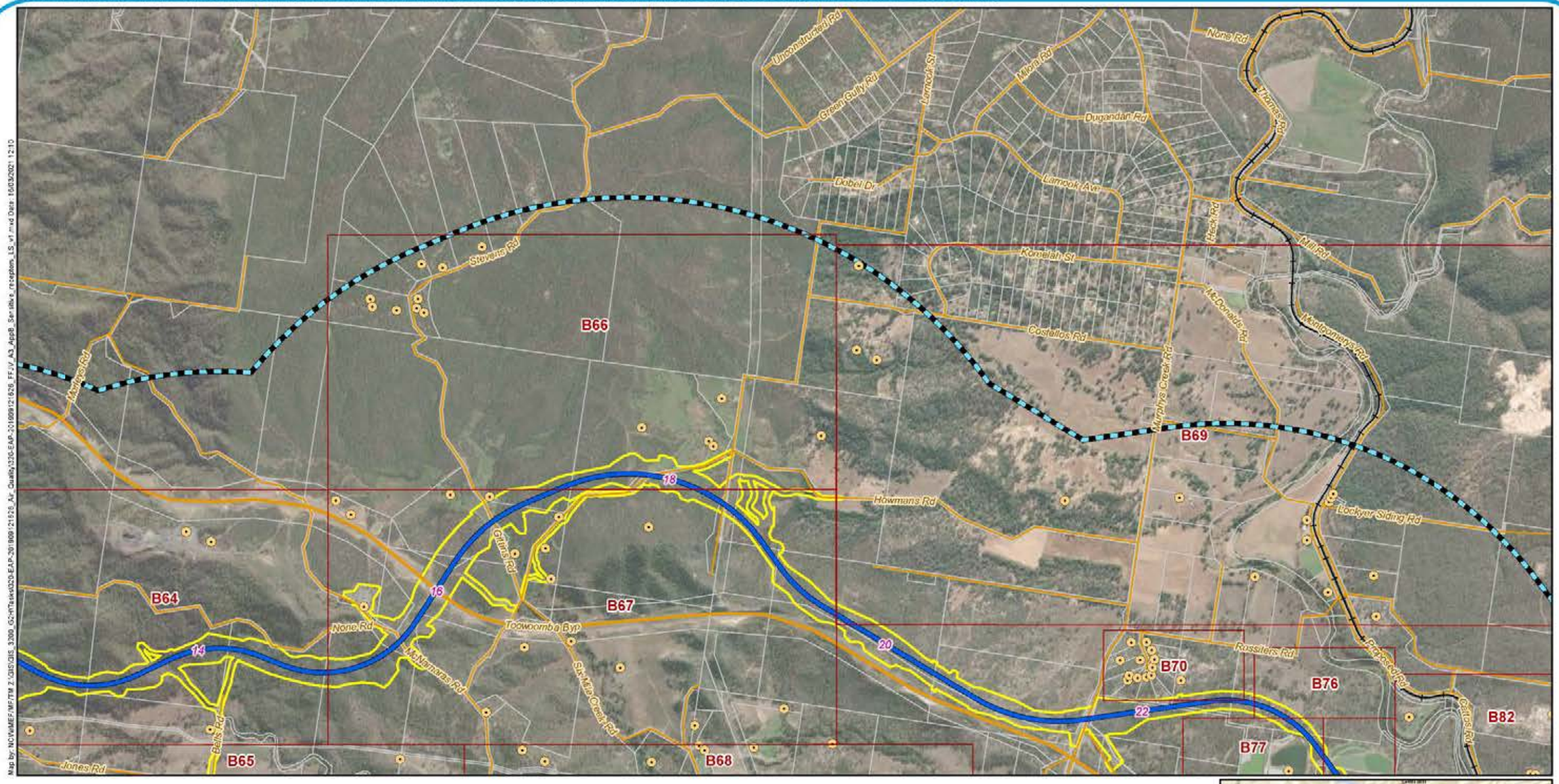
A3 scale: 1:30,000
0 0.2 0.4 0.6 0.8 1km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B5: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: NCW\MEF\MF/TM Z:\GIS\GIS_3200_G2H\Tasks\020-EAP-201909121626_Air_Quality\320-EAP-201909121626_FFJV_A3_AppB_Sensitive_receptors_LS_v1.mxd Date: 16/03/2021 12:10

Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Existing rail
- Major roads
- Minor roads
- Air Quality study area
- EIS disturbance footprint
- Cadastre
- Areas mapped separately



A3 scale: 1:30,000

0 0.2 0.4 0.6 0.8 1km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B6: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Map by: NCV\wMEF\WF7\# Z:\GIS\GIS_3269_G2H\Tasks\320-EAP-20190912\1828_FFJV_A3_AppB_Sensitive_receptors_LS_v1.mxd Date: 16/03/2021 12:10

B66 B67 B68 B69 B70 B71 B72 B73 B74 B75 B76 B77 B78 B79 B80 B82 B83 B87 B91 B95

18 20 22 24 26

Howmans Rd
Costellos Rd
Korreelah St
Lomond Ave
Heck Rd
Mt Donnelly Rd
Montgomerys Rd
Mill Rd
None Rd
Airforce Rd
Lockyer Siding Rd
Murphys Creek Rd
Rossiters Rd
Prospect Rd
Toowoomba Byp
Postmans Ridge Rd
Six Mile Creek Rd
Brookside Pl
Ashland Dr
Spelling Rd
Lionel Dr
Gatton Rd
Air Force Rd
Burgesons Way
Anderssens Rd
McGlashan Rd
Wamgal Rd
Helidon Dip Rd

Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- H2C project alignment
- Existing rail
- Major roads
- Minor roads
- Air Quality study area
- EIS disturbance footprint
- Cadastre
- Areas mapped separately



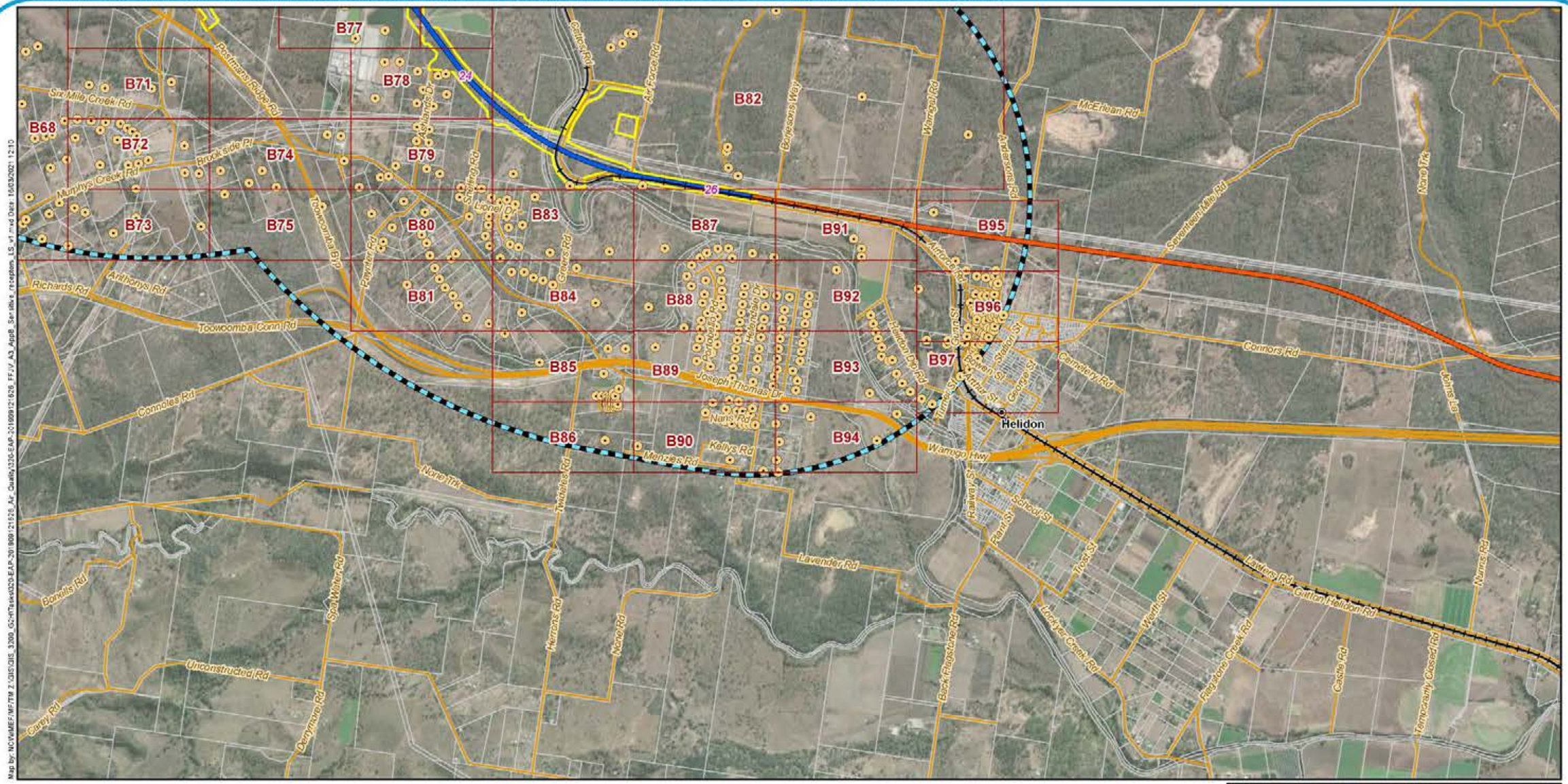
A3 scale: 1:30,000
0 0.2 0.4 0.6 0.8 1km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B7: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- 5 Chainage (km)
- Localities
- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- H2C project alignment
- Existing rail
- Major roads
- Minor roads
- Air Quality study area
- EIS disturbance footprint
- Cadastre
- Areas mapped separately



A3 scale: 1:30,000

0 0.2 0.4 0.6 0.8 1km

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 1
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B8: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:5,000

0 60 120 180 240 300m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B9: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Minor roads
- Cadastre

A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B10: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B11: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B12: Air quality sensitive receptors

Map by: SR:\NEF\TMZ\GIS\GIS_3200_G2H-Tasks\320-EAR-20190912\1628_Air_QualityO20-EAP-20190912\1628_FF_IV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

Map by: SRNEFFM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190912\626_Air_QualityO20-EAP-20190912\626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

R208 R219 R198 R205 R215 R204 R212 R218 R120 R121 R209 R161 R196 R211 R136 R144 R180 R194 R207 R150 R160 R179 R193 R206 R132 R165 R192 R142 R173 R178 R210 R191 R151 R159 R164 R203

Calcutt Rd
Panorama Cr
Hillview Cr

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B13: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B14: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B15: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B16: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

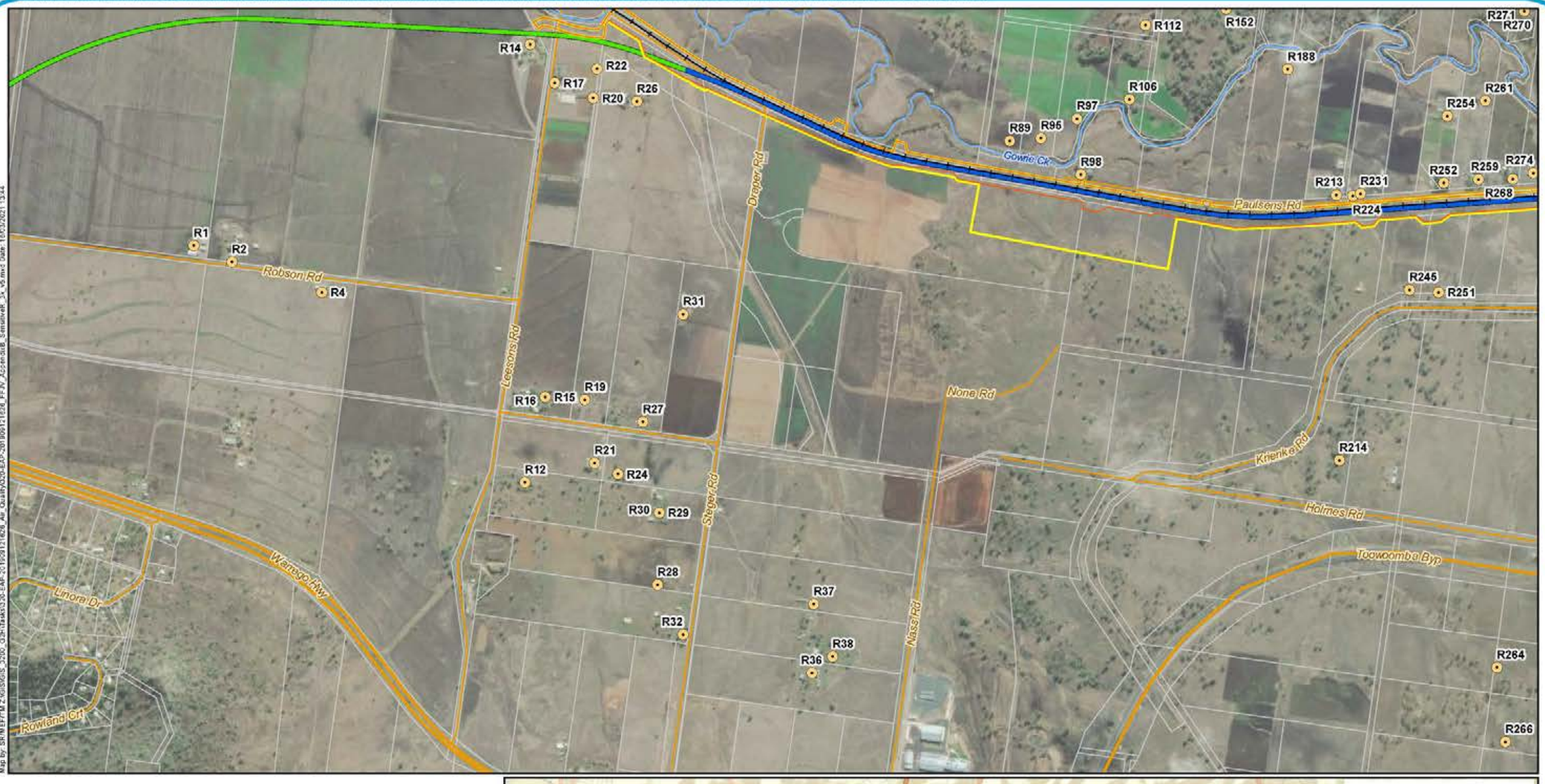
Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B17: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- B2G project alignment
- G2H project alignment
- Existing rail
- Major roads
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre

A3 scale: 1:15,000

0 200 400 600 800 1,000m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B18: Air quality sensitive receptors

Map by: SRM EFFM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121626_FF JV_AccessB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B19: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B20: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Minor roads
- Cadastre

A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B21: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Minor roads
- Cadastre

A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B22: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B23: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SRNEFFM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190912\1626_Air_QualityO20-EAP-20190912\1626_FF_IV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:5,000

0 60 120 180 240 300m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B24: Air quality sensitive receptors

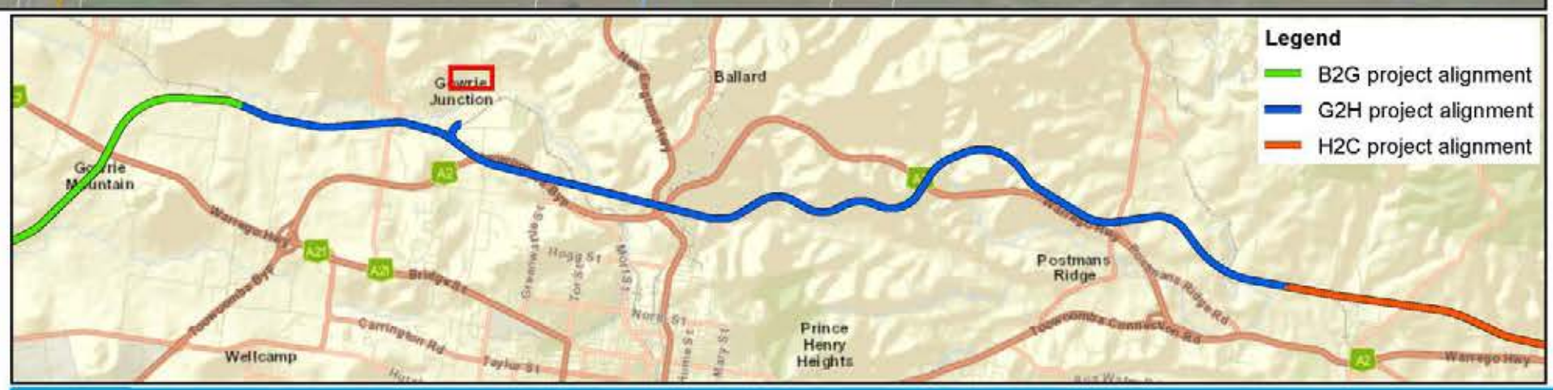
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B25: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B26: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Existing rail
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre

A3 scale: 1:5,000

0 60 120 180 240 300m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B27: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- Localities
- G2H project alignment
- Crossing loop
- Existing rail
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B28: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B29: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B30: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR:\EEF\TMZ\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121628_FFJV_AccessibB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B31: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Minor roads
- Cadastre

A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B32: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B33: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B34: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B35: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR:\NEFP\M Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190121626_Air_QualityO20-EAP-20190121626_FF:IV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Tunnel
- Major roads
- Minor roads
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B36: Air quality sensitive receptors

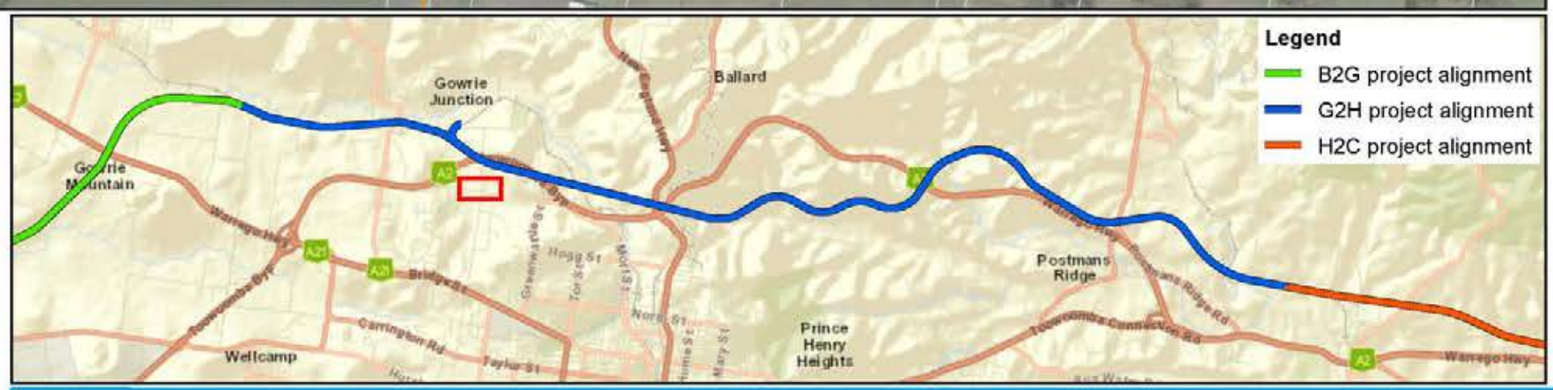
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR:\EFPM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121628\20190121628_Air_QualityO20-EAP-20190121628_FF JV_AccessibB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B37: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/NEFP/M:Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190912\628_Air_QualityA320-EAP-20190912\628_FF_IV_AccessibB_SensitiveR_3x_v5.mxd Date: 16/3/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B38: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR:\WEF\MZ\GIS\GIS_3200_G2H\Tasks\320-EAP-20190912\1626_Air_QualityO20-EAP-20190912\1626_FF_IV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B39: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/NEF/TM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121626_FF JV_AccessB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:10,000

0 130 260 390 520 650m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B40: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Existing rail
- Tunnel
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:5,000

0 60 120 180 240 300m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B41: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B42: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/NEF/TM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121626_Air_QualityO20-EAP-20190121626_FF_IV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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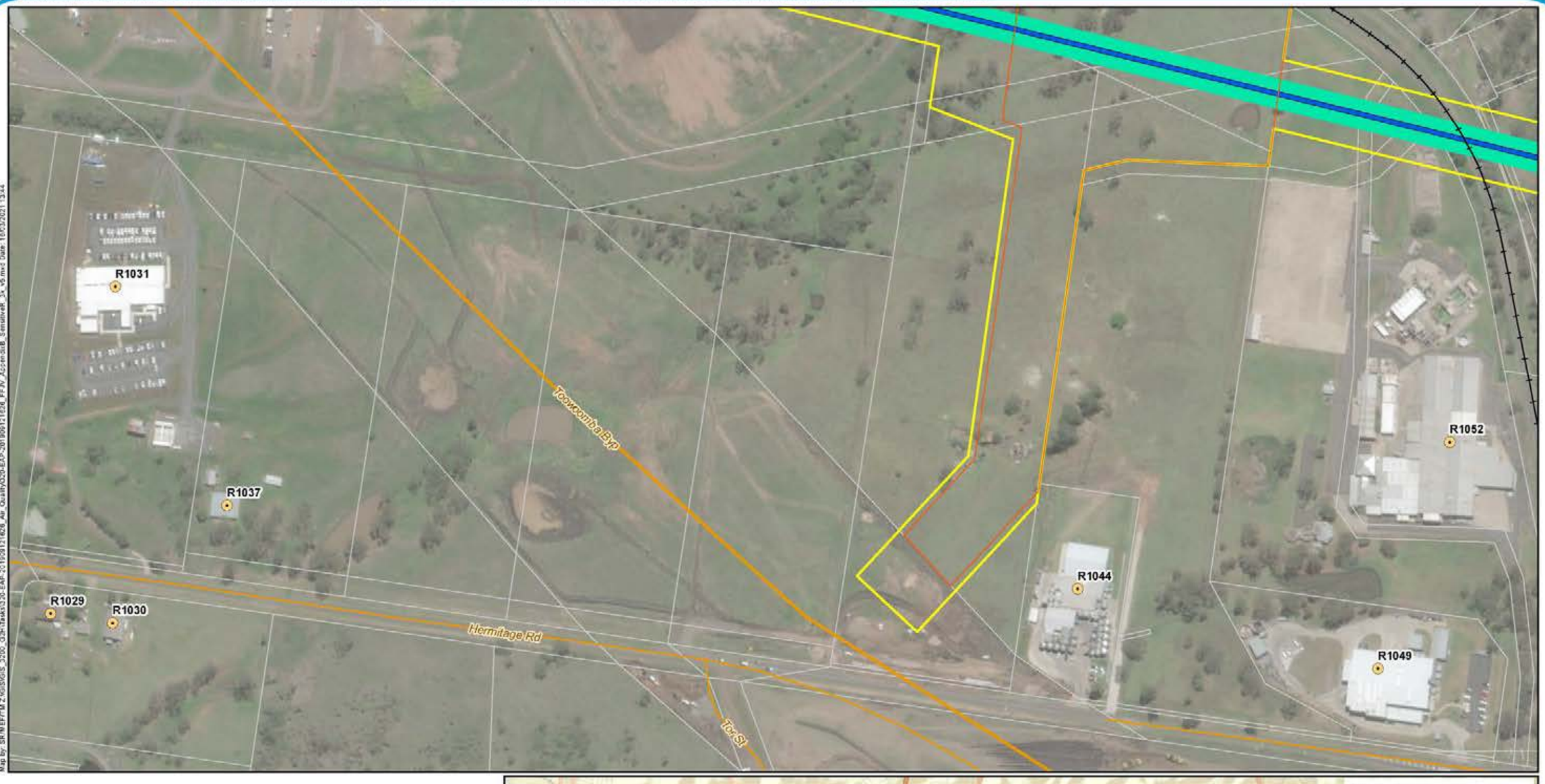
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B43: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/NEF/TMZ/GIS/GIS_3200_G2H-Tasks\320-EAP-20190121626_Air_QualityO20-EAP-20190121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Existing rail
- Tunnel
- Major roads
- Minor roads
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B44: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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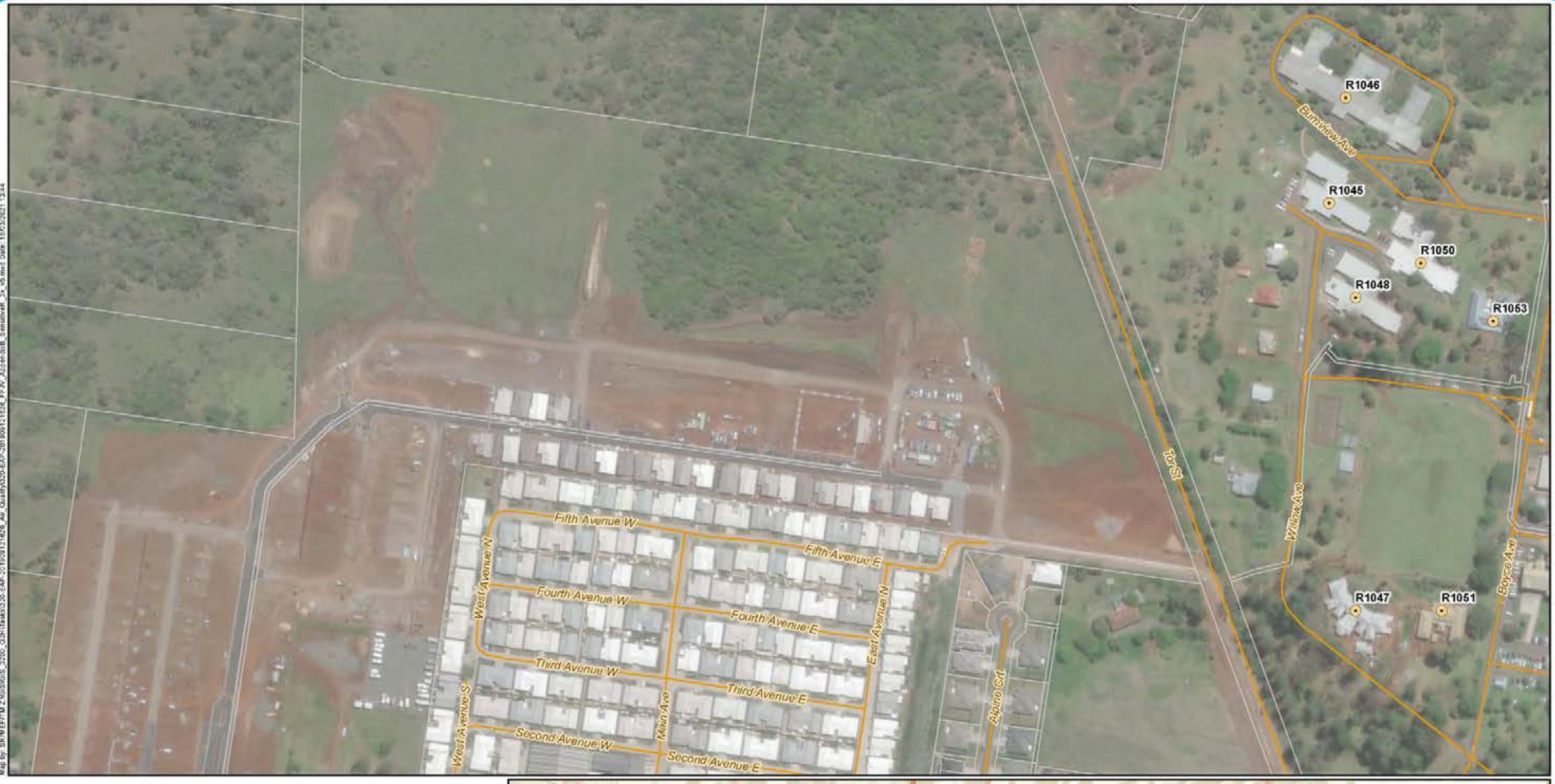
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B45: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Minor roads
- Cadastre

A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B46: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B47: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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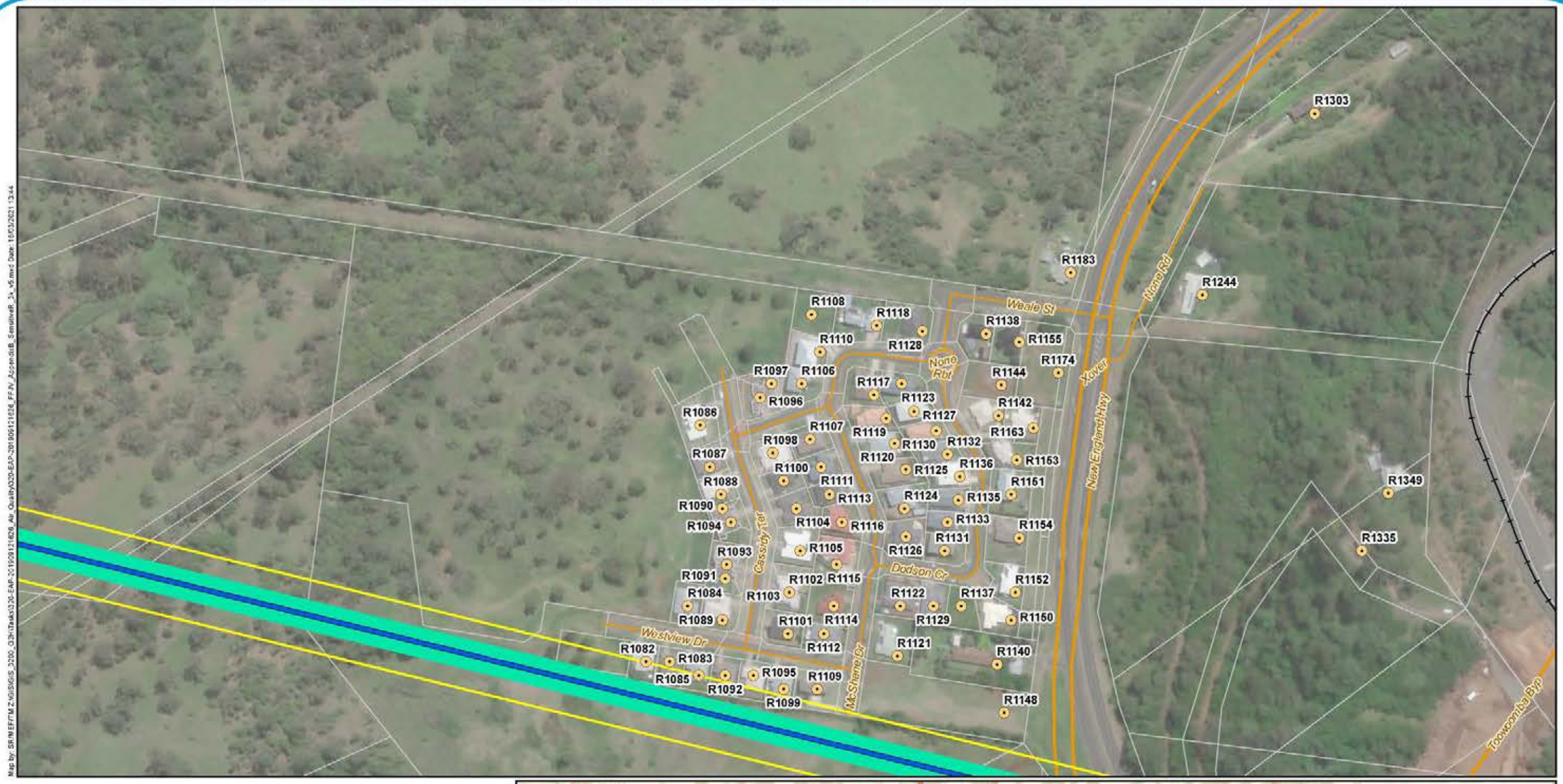
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B48: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Existing rail
- Tunnel
- Major roads
- Minor roads
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B49: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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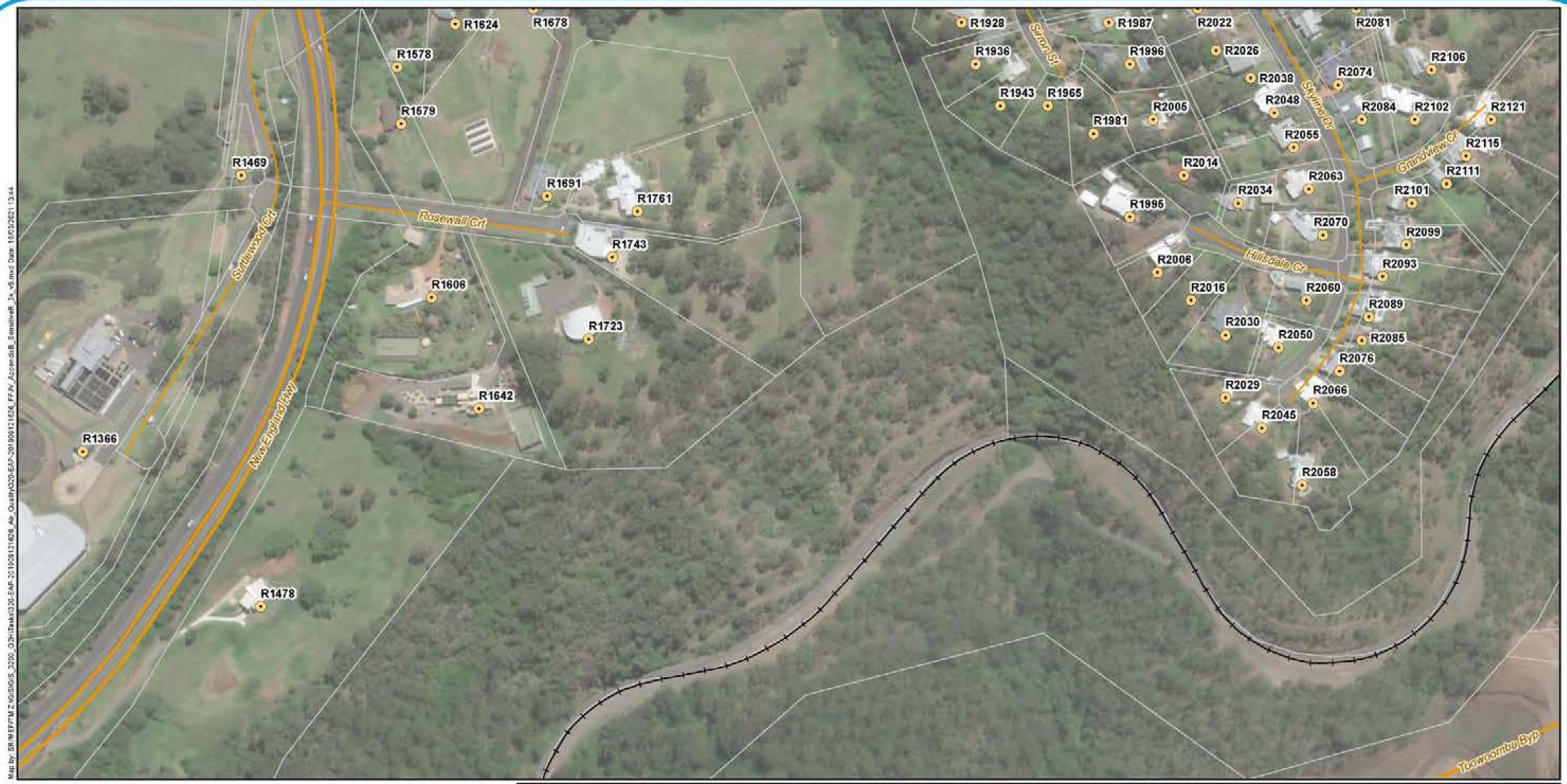
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B50: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

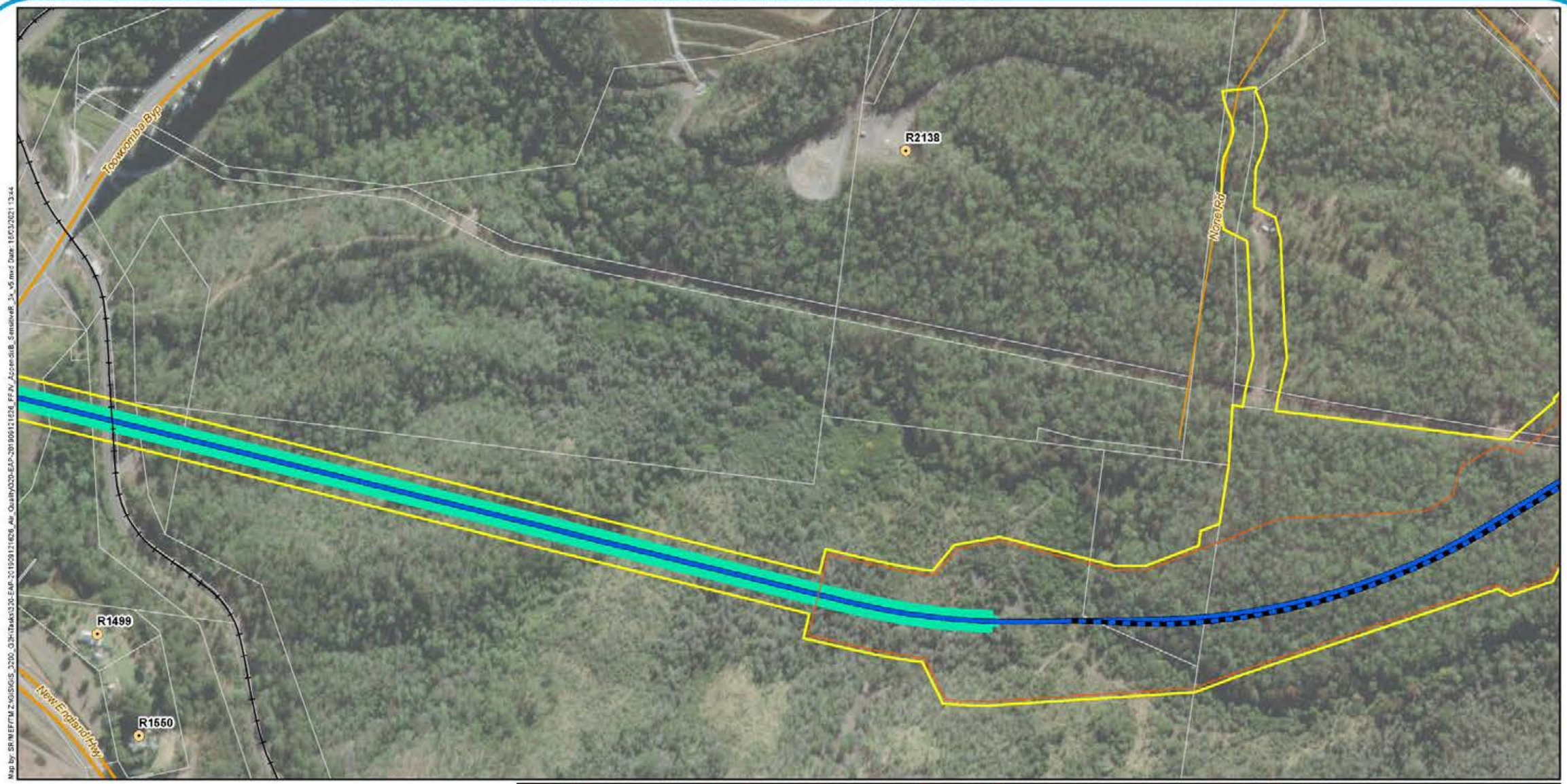
Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B51: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SRNEFFM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121626_Air-QualityO20-EAP-20190121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Crossing loop
- Existing rail
- Tunnel
- Major roads
- Minor roads
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:5,000

0 60 120 180 240 300m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B52: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:1,500

0 20 40 60 80 100m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B53: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:1,500

0 20 40 60 80 100m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B54: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- Sensitive receptors
- Existing rail
- Minor roads
- Cadastre



A3 scale: 1:1,500

0 20 40 60 80 100m

Future Freight
Integrating Community, Environment and Engineering

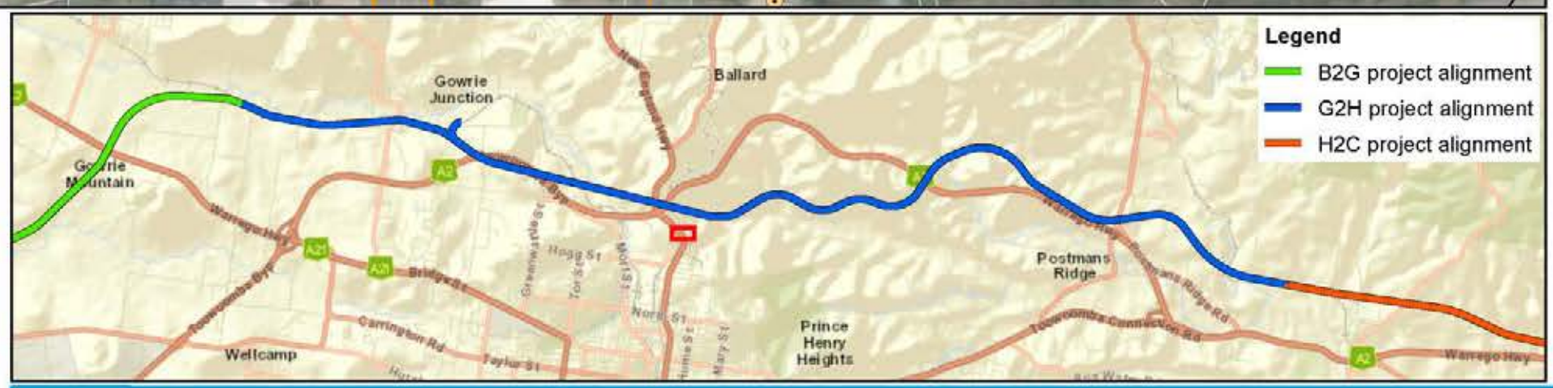
Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B55: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Cadastre

A3 scale: 1:1,500

0 20 40 60 80 100m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B56: Air quality sensitive receptors

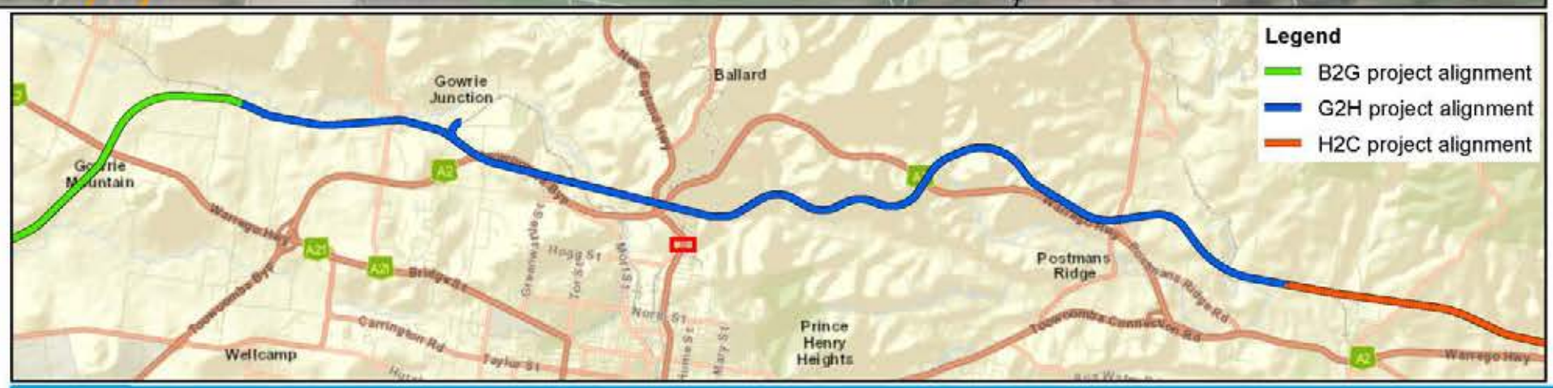
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:1,500

0 20 40 60 80 100m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B57: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/NEF/TM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121626_Air_QualityO20-EAP-20190121626_FF_IV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:1,500

0 20 40 60 80 100m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B58: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

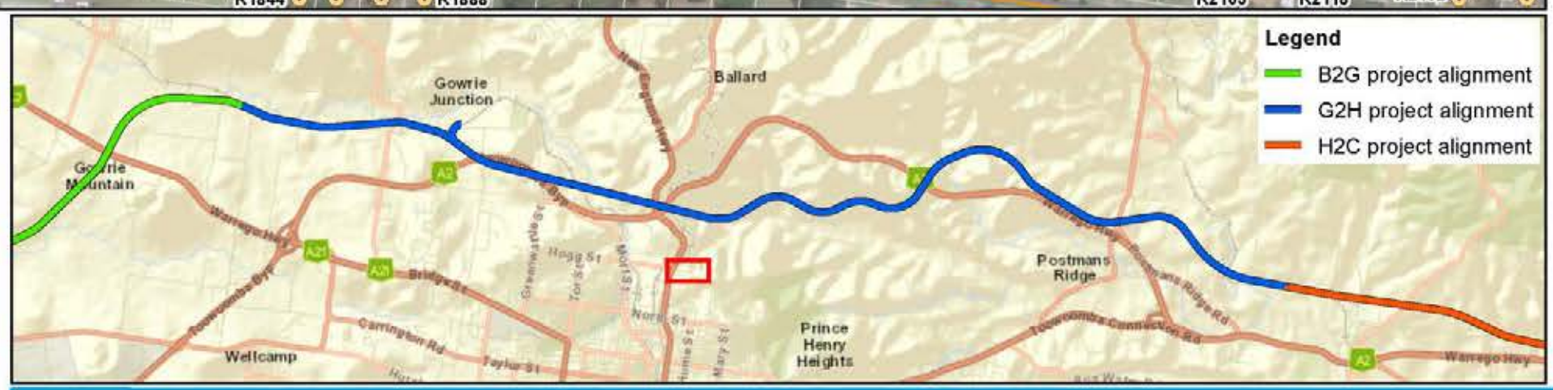
Appendix B59: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- Sensitive receptors
- Existing rail
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B60: Air quality sensitive receptors

Map by: SRINIEFFM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121628_Air_QualityO20-EAP-20190121628_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

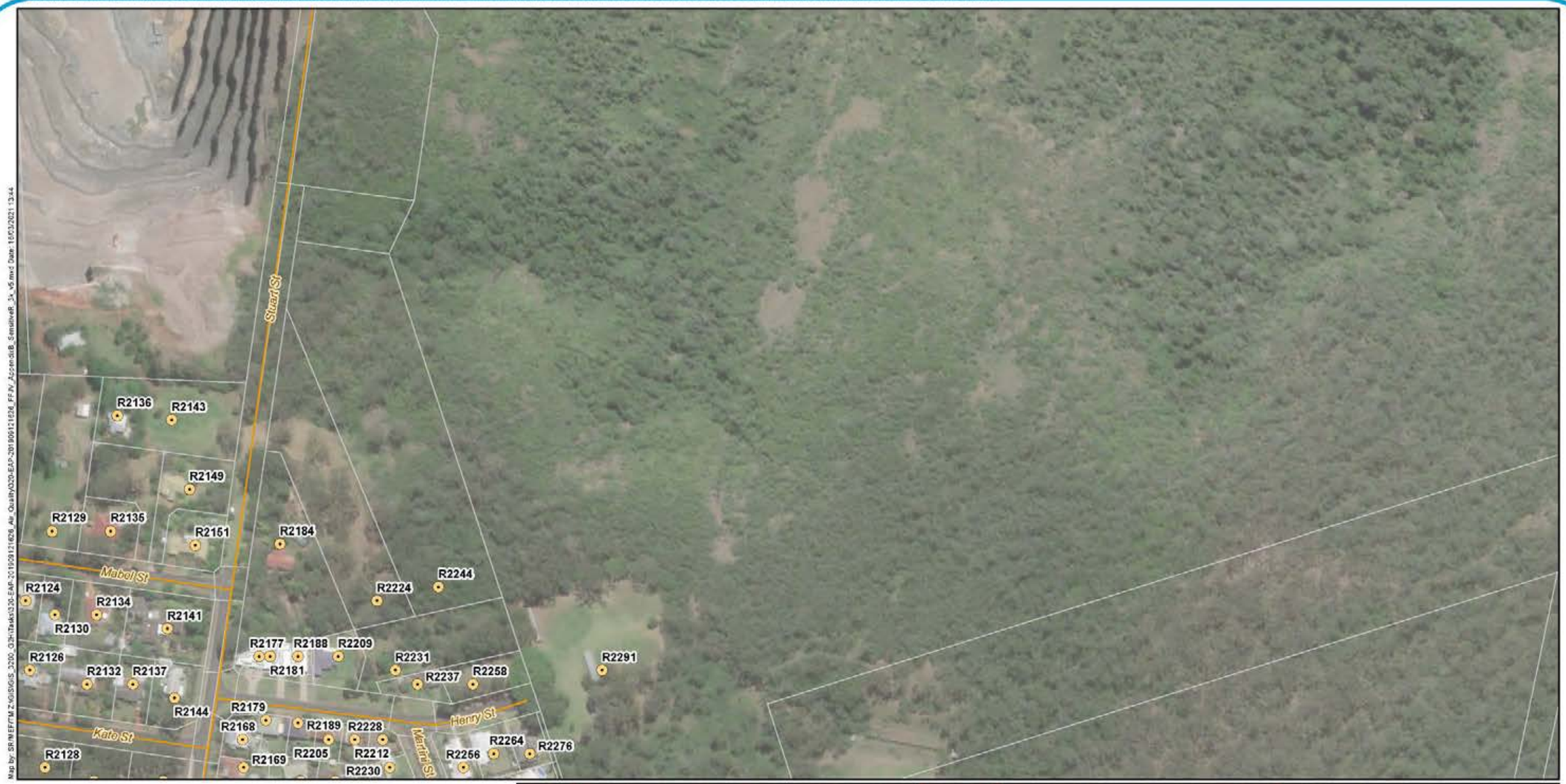
Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B61: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

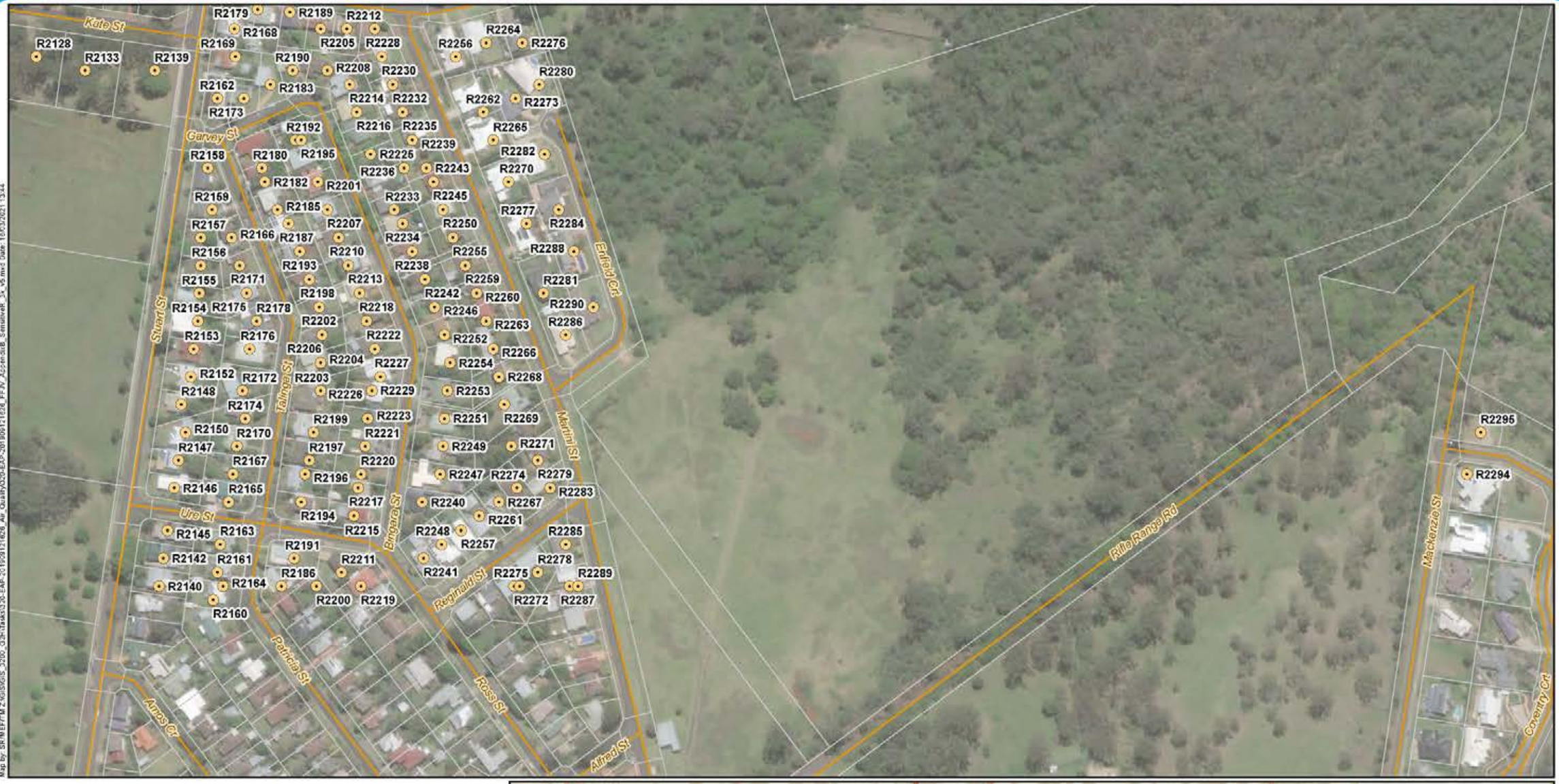
Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B62: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

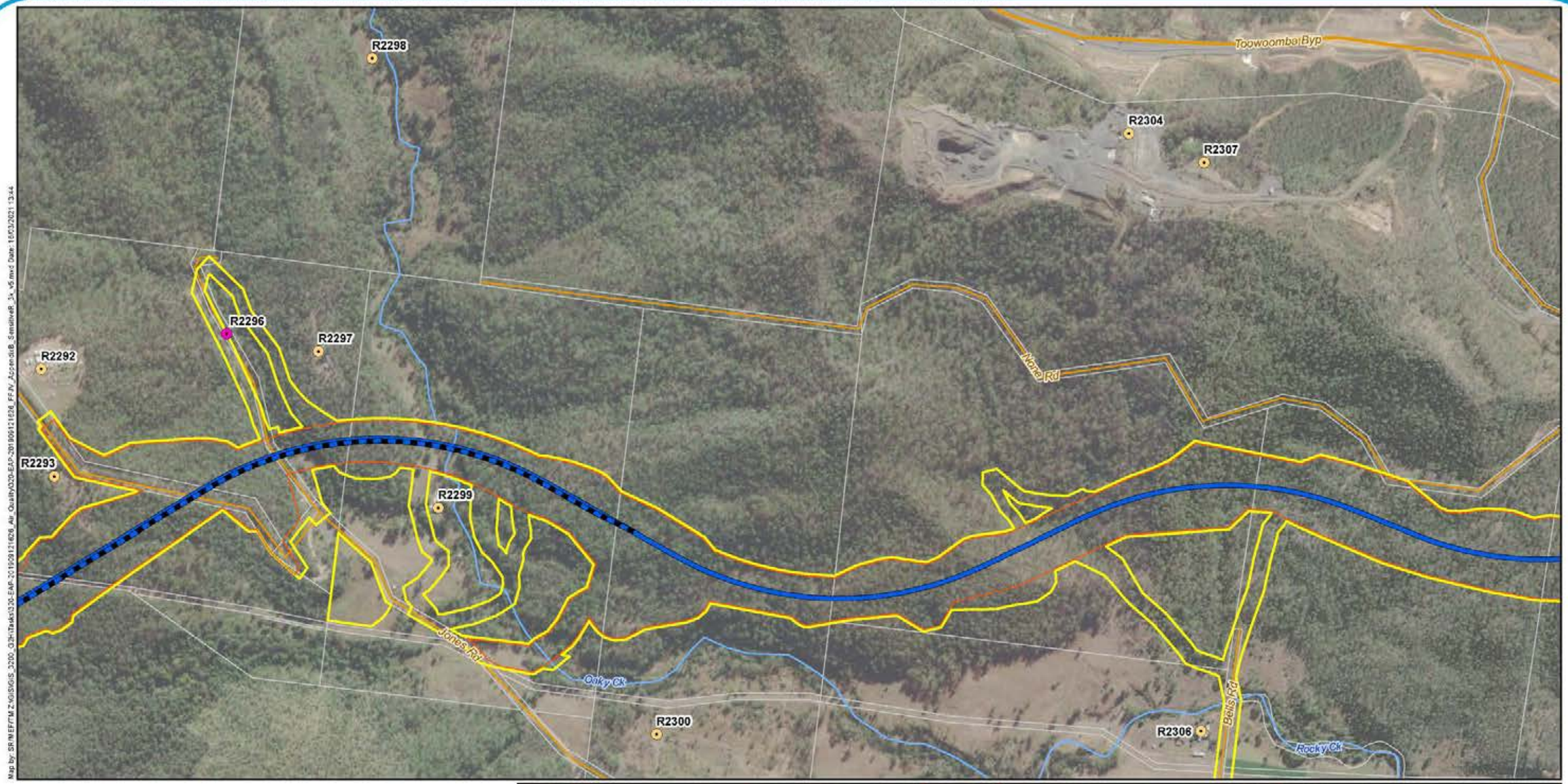
Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B63: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- Sensitive receptors
- Sensitive receptors within the EIS disturbance footprint
- G2H project alignment
- Crossing loop
- Major roads
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:10,000

0 130 260 390 520 650m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B64: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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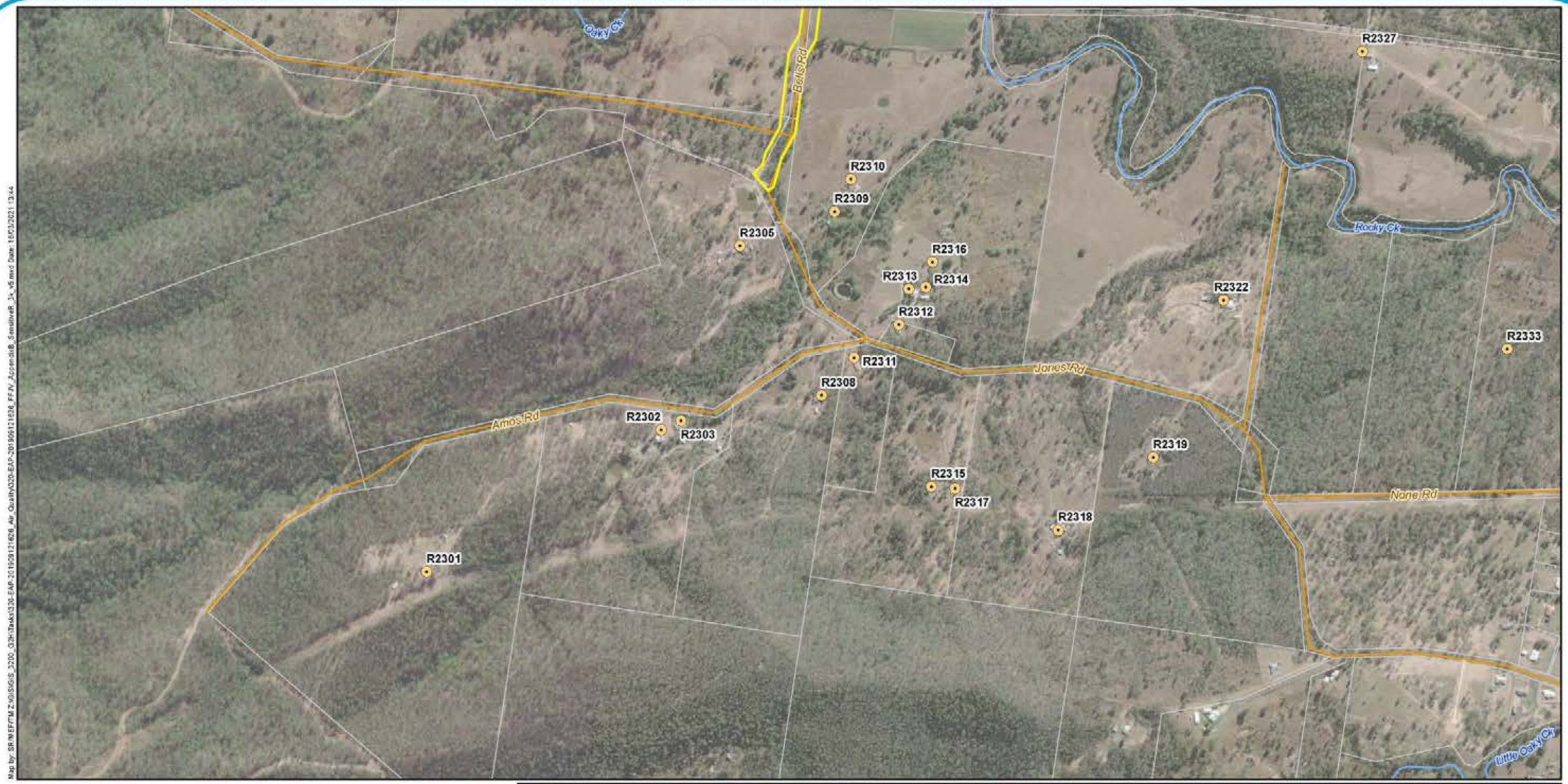
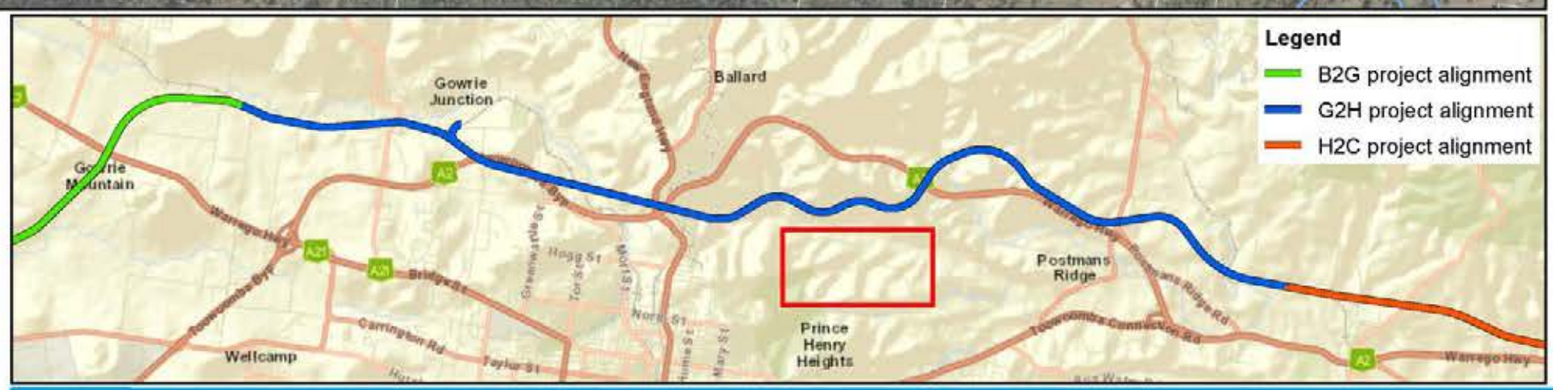


Legend

- Sensitive receptors
- Minor roads
- Watercourses
- EIS disturbance footprint
- Cadastre



A3 scale: 1:10,000

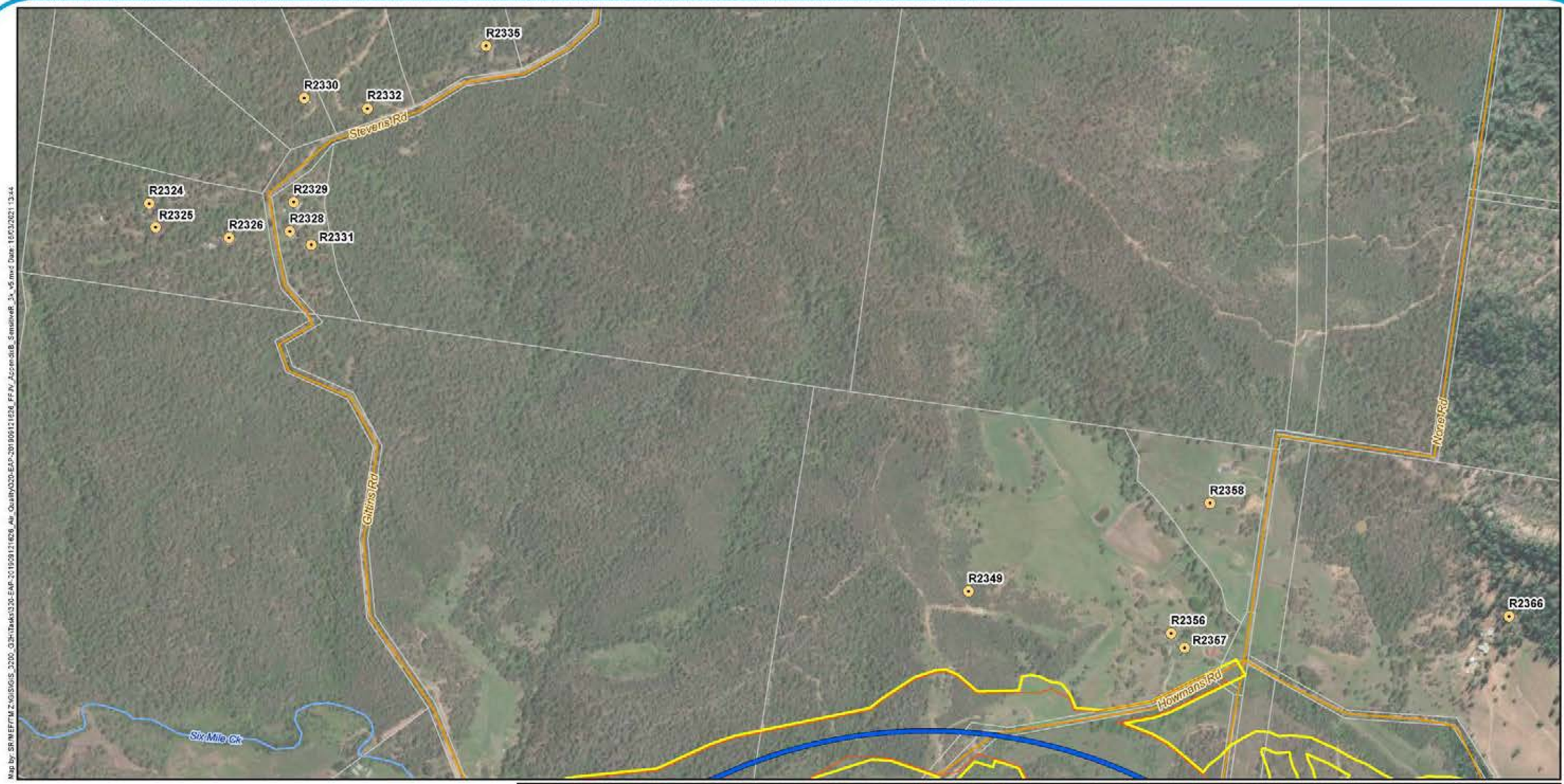
0 130 260 390 520 650m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B65: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR:\NEFTM Z:\GIS\GIS_3200_G2H\Tasks\320-EAR-20190121626_Air_QualityO20-EAP-20190121626_FF JV_AccessibB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:10,000

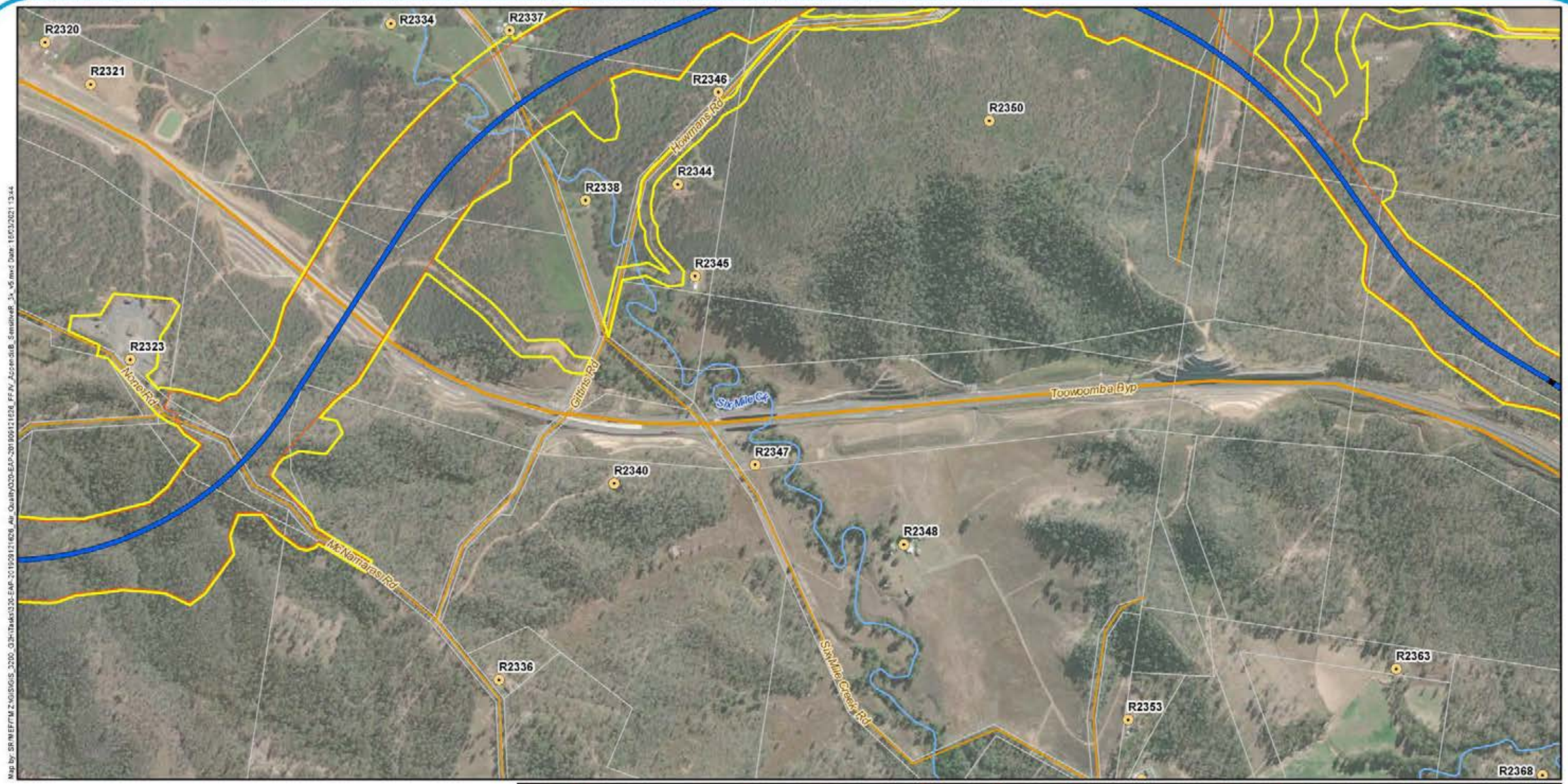
0 130 260 390 520 650m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B66: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- G2H project alignment
- Crossing loop
- Major roads
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre

A3 scale: 1:10,000

0 130 260 390 520 650m

Future Freight
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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B67: Air quality sensitive receptors

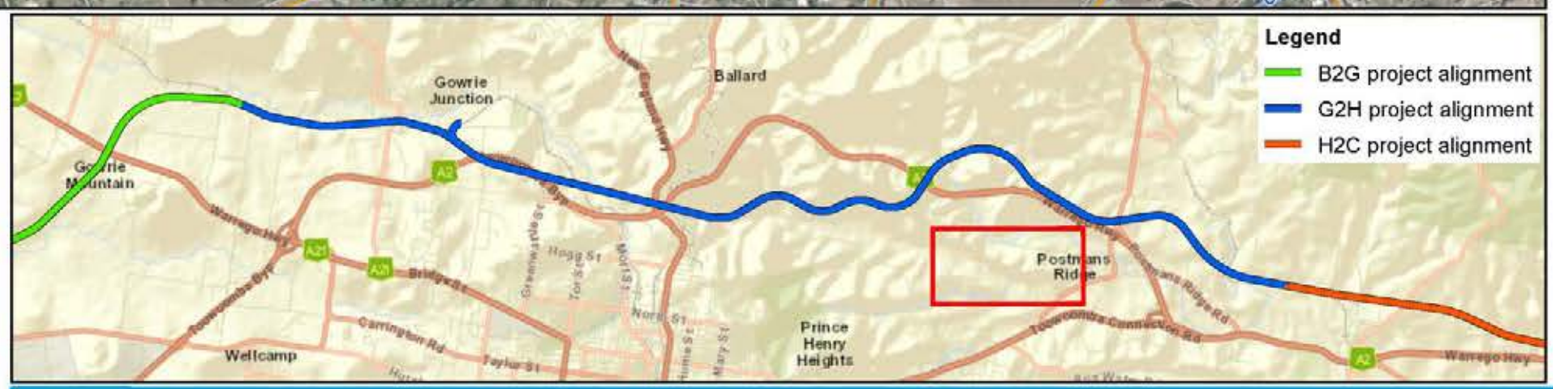
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:10,000

0 130 260 390 520 650m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B68: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/NEF/M:Z:\GIS\GIS_3200_G2H\Tasks\330-EAP-20190121628_AirQualityO20-EAP-20190121628_FF IV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Crossing loop
- Existing rail
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:15,000

0 200 400 600 800 1,000m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B69: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Minor roads
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B70: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B71: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR:\WEF\MZ\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121628_FF\V_Appendix\B_Sensitive\R_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B72: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B73: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- Sensitive receptors
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B74: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B75: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Existing rail
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B76: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B77: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- Minor roads
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B78: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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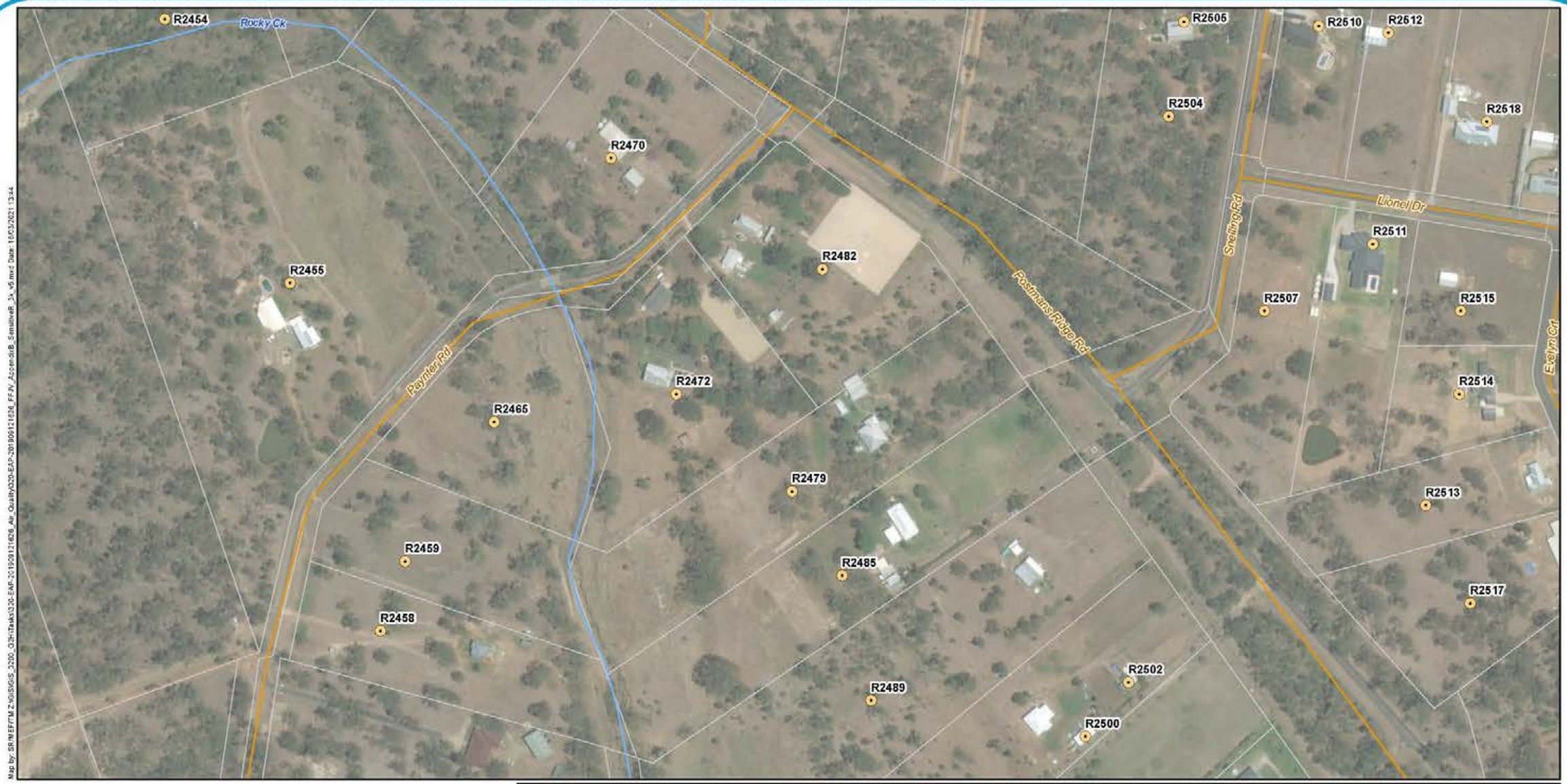
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B79: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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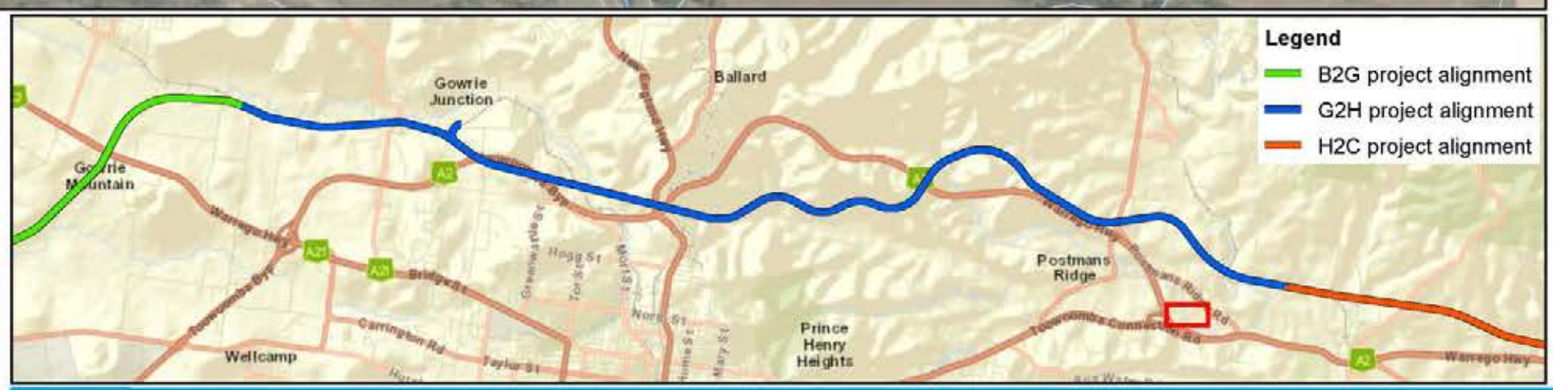
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B80: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Major roads
- Minor roads
- Watercourses
- Cadastre

A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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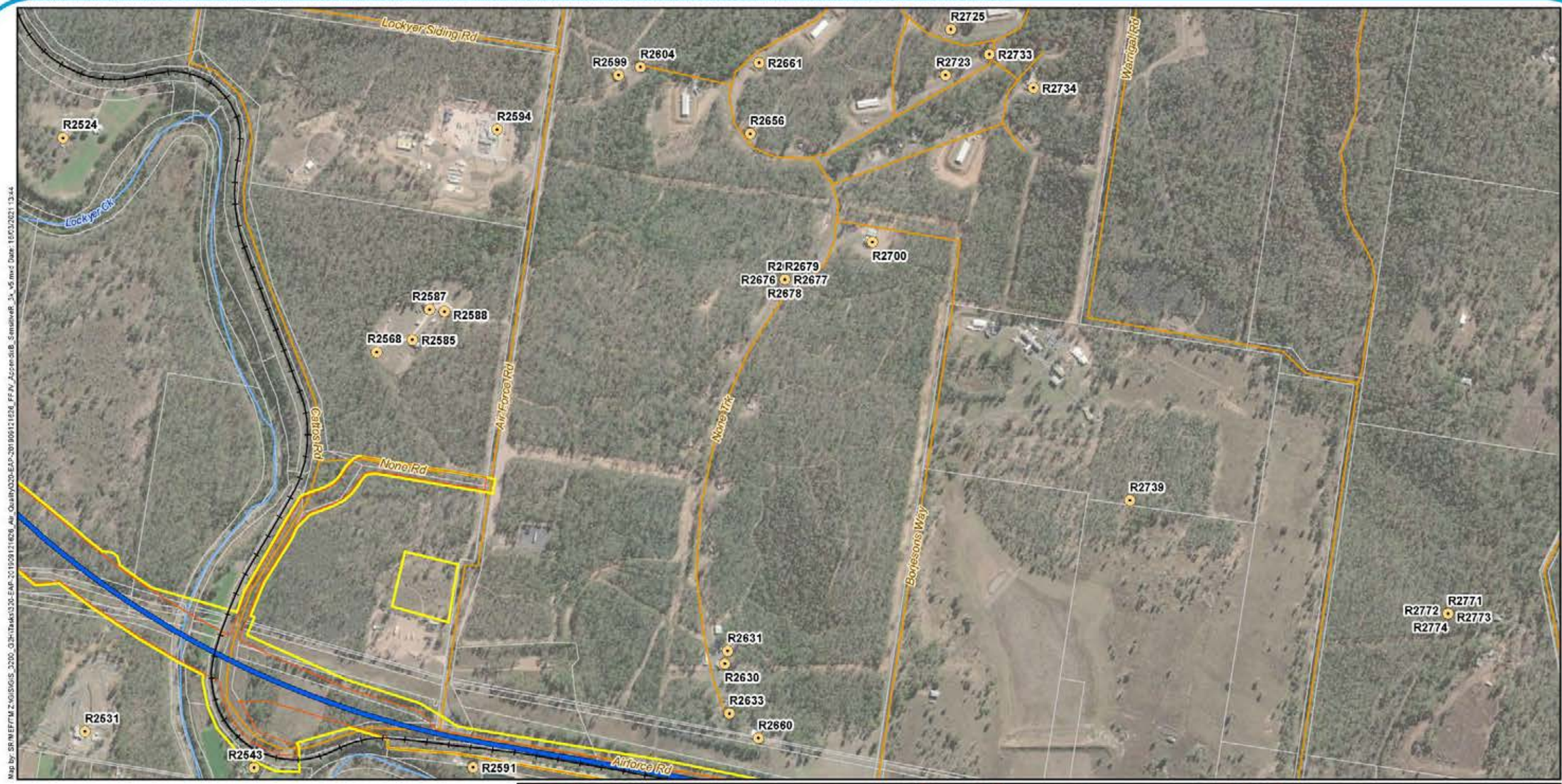
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B81: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Legend

- Sensitive receptors
- G2H project alignment
- Existing rail
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:10,000
0 130 260 390 520 650m

Future Freight
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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B82: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



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Legend

- Sensitive receptors
- Minor roads
- Watercourses
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B83: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B84: Air quality sensitive receptors

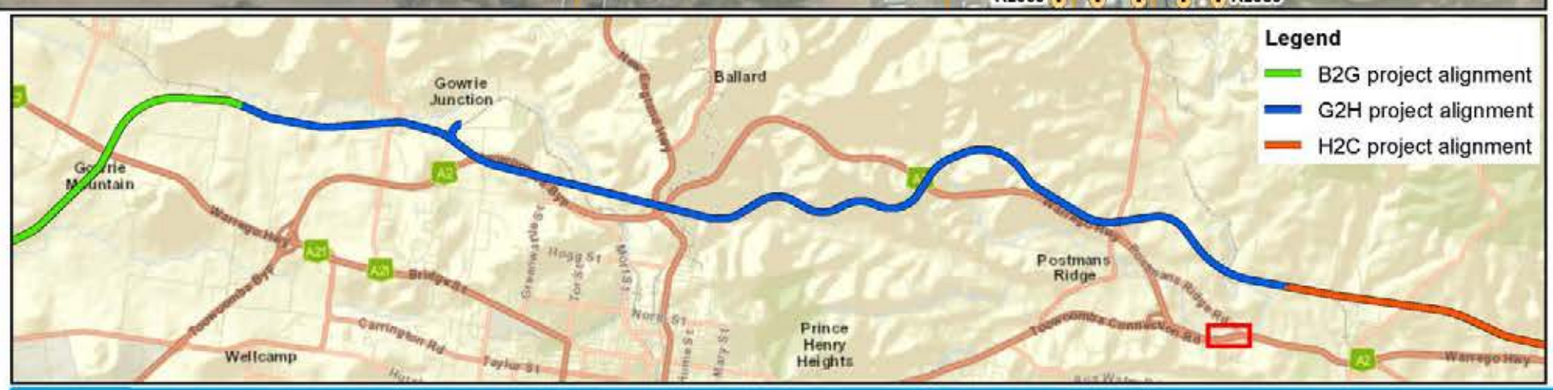
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
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Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B85: Air quality sensitive receptors

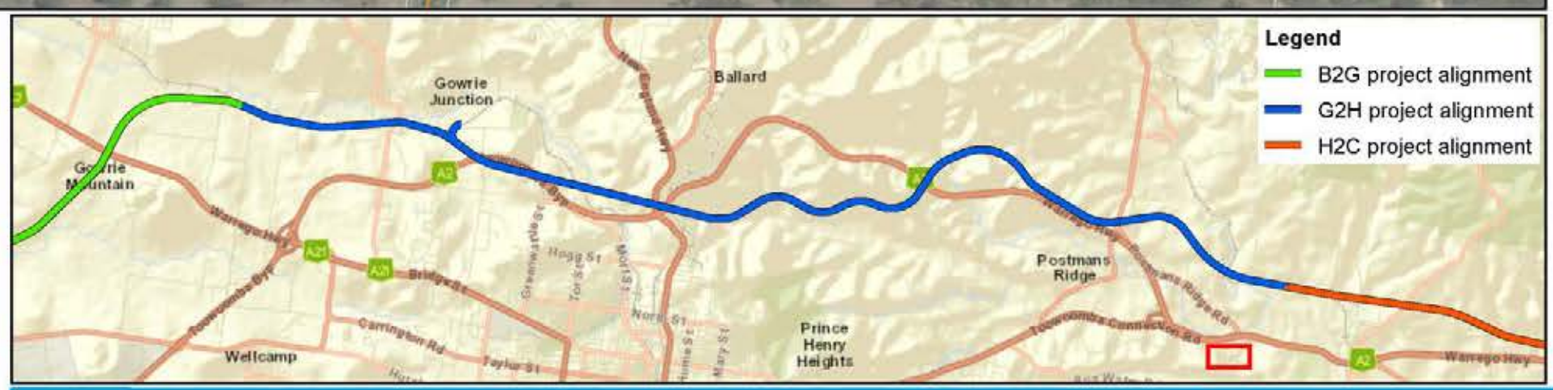
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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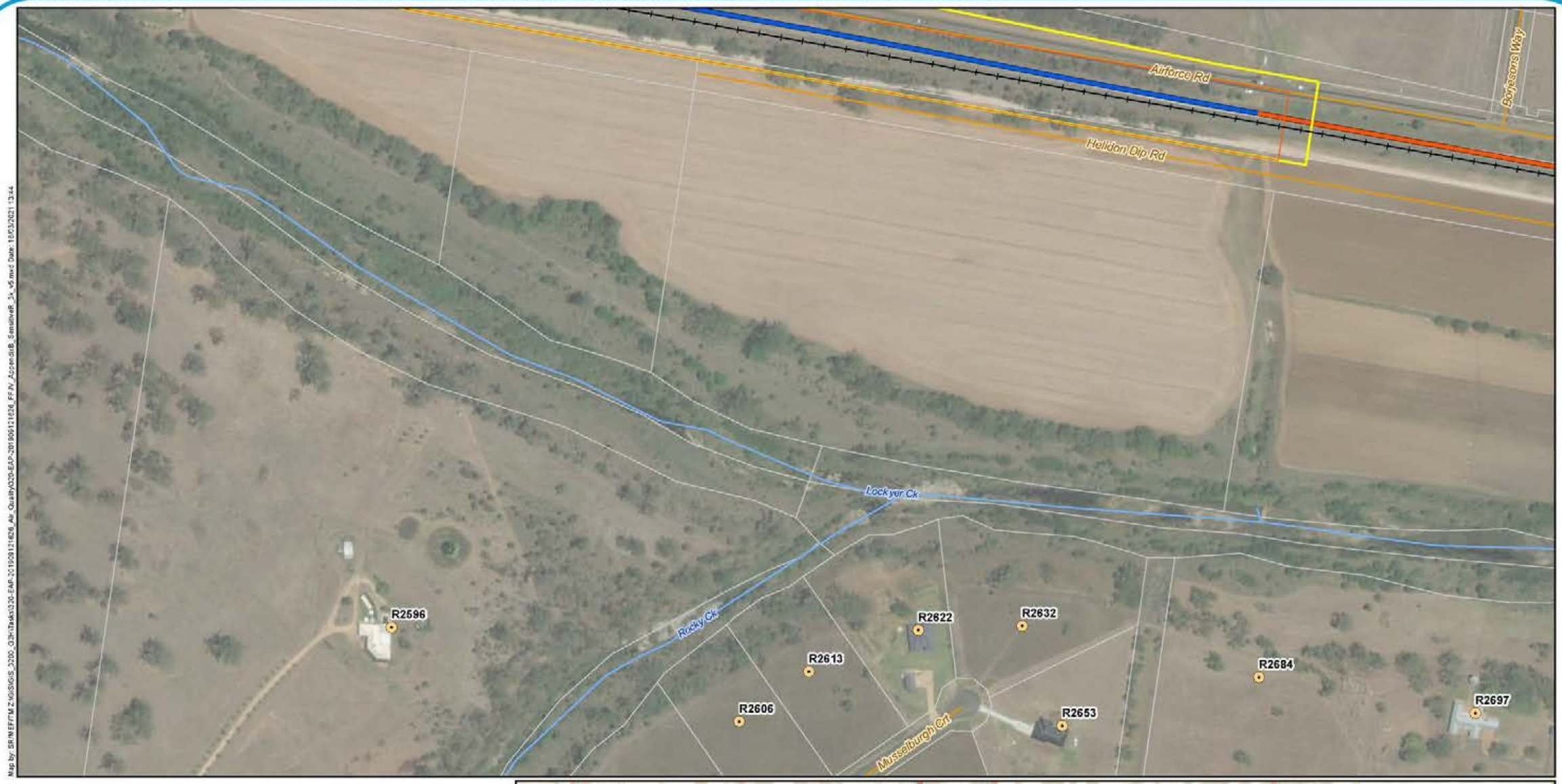
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B86: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- G2H project alignment
- H2C project alignment
- Existing rail
- Minor roads
- Watercourses
- Permanent disturbance footprint
- EIS disturbance footprint
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B87: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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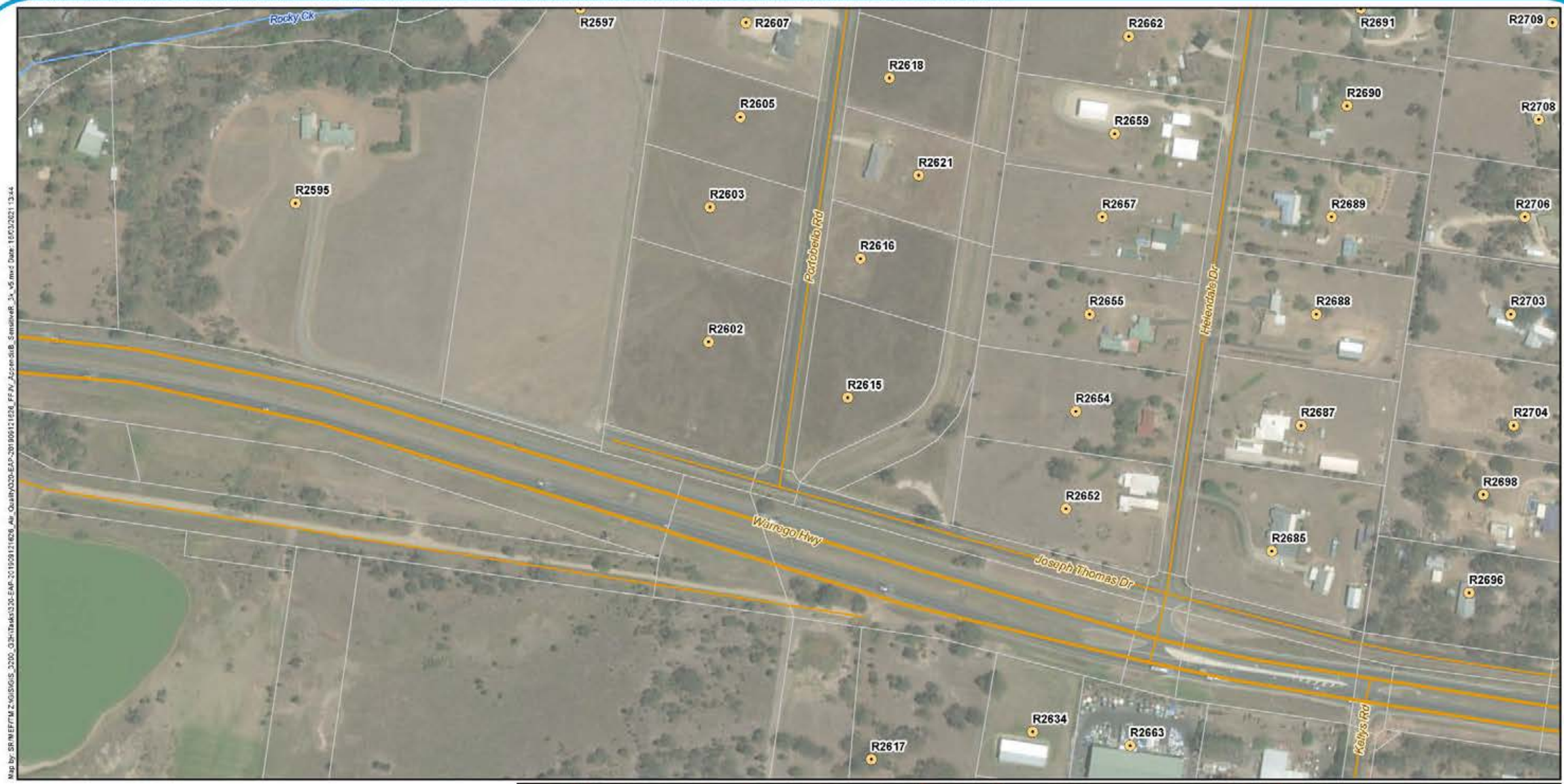
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B88: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B89: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/NEF/TM Z:\GIS\GIS_3200_G2H-Tasks\320-EAP-20190121626_Air_QualityO20-EAP-20190121626_FF/V_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B90: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- H2C project alignment
- Existing rail
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B91: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3k_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B92: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B93: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Major roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

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Coordinate System: GDA 1994 MGA Zone 56

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Appendix B94: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SRNEFFM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-20190121626_Air_QualityO20-EAP-20190121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- H2C project alignment
- Existing rail
- Minor roads
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon
Appendix B95: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community





Legend

- Sensitive receptors
- Existing rail
- Minor roads
- Cadastre

A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
Coordinate System: GDA 1994 MGA Zone 56

Gowrie to Helidon

Appendix B96: Air quality sensitive receptors

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



Map by: SR/MEF/TM Z:\GIS\GIS_3200_G2H\Tasks\320-EAP-201909121626_Air_Quality\020-EAP-201909121626_FFJV_AppendixB_SensitiveR_3x_v5.mxd Date: 16/03/2021 13:44

Legend

- Sensitive receptors
- Localities
- Existing rail
- Minor roads
- Watercourses
- Cadastre



A3 scale: 1:3,000

0 40 80 120 160 200m

Future Freight
Integrating Community, Environment and Engineering

Issue date: 16/03/2021 Version: 5
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Gowrie to Helidon

Appendix B97: Air quality sensitive receptors

APPENDIX

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Air Quality Technical Report

Appendix C Dispersion model details

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

Appendix C
Dispersion Model Details

Dispersion modelling uses mathematical equations to characterise atmospheric processes, which disperse a pollutant emitted by a source. Based on emissions and meteorological inputs, dispersion models can be used to predict concentrations at selected downwind receiver locations. Air quality models are used to determine compliance with air quality standards. CALPUFF, a well-known and internationally used US EPA guideline model was used in this assessment. Details for the CALPUFF model can be found on the US EPA Support Centre for Regulatory Atmospheric Modeling (SCRAM) website (US EPA 2021).

Dispersion models

Two dispersion models are recommended for regulatory assessments in Australia and New Zealand, CALPUFF and AERMOD. AERMOD has recently replaced AUSPLUME as the guideline model for all near-field, steady state modelling applications in Victoria. CALPUFF is recommended for use for all modelling applications where the steady state assumption does not apply; this includes complex terrain and coastal environments. A major difference between AERMOD and CALPUFF is in the models' treatment of meteorology. AERMOD is a 2-dimensional model where the effects of one single surface station and one single upper air station are assumed to be spatially uniform across the entire modelling region in its meteorological processor. In contrast, CALMET (CALPUFF's meteorological module) is a 3-dimensional model and is able to use the output of numerical prognostic meteorological models as well as multiple observation sites to assist in the development of three-dimensional wind fields.

Overview of the CALPUFF suite of models

The CALPUFF modelling system provides a non-steady state modelling approach, which evaluates the effects of spatial changes in the meteorological and surface characteristics. It offers the ability to treat stagnation, multiple-hour pollutant build-up, recirculation and causality effects, which are beyond the capabilities of steady-state models. CALPUFF is widely used in many countries (over 100 countries) throughout the world and has been incorporated as a regulatory model in several countries (Barclay and Scire 2011).

The CALPUFF modelling system includes three main components; CALMET, CALPUFF and CALPOST, and a large set of pre-processing programs designed to interface the model to standard, routinely-available meteorological and geophysical datasets. In simple terms, CALMET is a meteorological model, which develops hourly wind and temperature fields on a three-dimensional gridded modelling domain. CALPUFF is a transport and dispersion model, which advects "puffs" of material emitted from modelled source, simulating dispersion and transformation processes along the way. In doing so, it uses the fields generated by CALMET. The primary output files from CALPUFF contain either hourly concentrations or hourly deposition fluxes evaluated at selected receiver locations. CALPOST is used to process these files, producing summaries of the results of the simulation.

CALMET overview

CALMET is a diagnostic meteorological model, which produces three-dimensional wind fields based on parameterised treatments of terrain effects such as slope flows and terrain blocking effects. Meteorological observations are used to determine the wind field in areas of the domain within which the observations are representative. Fine scale terrain effects are determined by the diagnostic wind module in CALMET.

The CALMET meteorological model consists of a diagnostic wind field module and micrometeorological modules for overwater and overland boundary layers (Scire et al. 2000). When using large domains, the user has the option to adjust input winds to a Lambert Conformal Projection coordinate system to account for the Earth's curvature. The diagnostic wind field module uses a two-step approach to the computation of the wind fields (Douglas and Kessler 1988). In the first step, an initial-guess wind field is adjusted for kinematic effects of terrain, slope flows, and terrain blocking effects to produce a Step 1 wind field. The second step consists of an objective analysis procedure to introduce observational data into the Step 1 wind field in order to produce a final wind field. An option is provided to allow gridded prognostic wind fields to be used by CALMET, which may better represent regional flows and certain aspects of sea breeze circulations and slope/valley circulations. The prognostic data (as a 3D.DAT file) can be introduced into CALMET in three different ways:

- As a replacement for the initial guess wind field
- As a replacement for the Step 1 field
- As observations in the objective analysis procedure.

The techniques used in the CALMET model are briefly described below.

Step 1 wind field

Kinematic effects on terrain: CALMET uses the approach of Liu and Yocke (1980) to evaluate kinematic terrain effects. The domain-scale winds are used to compute a terrain-forced vertical velocity, subject to an exponential stability-dependent decay function. The kinematic effects of terrain on the horizontal wind components are evaluated by applying a divergence-minimisation scheme to the initial guess wind field. The divergence minimisation scheme is applied iteratively until the three-dimensional divergence is less than a threshold value.

Slope flows. Slope flows are computed based on the shooting flow parameterisation of Mahrt (1982). Shooting flows are buoyancy-driven flows, balanced by advection of weaker momentum, surface drag and entrainment at the top of the slope flow layer. The slope flow is parameterised in terms of the terrain slope, distance to the crest and local sensible heat flux. The thickness of the slope flow layer varies with the elevation drop from the crest.

Blocking effects. The thermodynamic blocking effects of terrain on the wind flow are parameterised in terms of the local Froude number (Allwine and Whiteman 1985). If the Froude number at a particular grid point is less than a critical value and the wind has an uphill component, the wind direction is adjusted to be tangential to the terrain.

Step 2 wind field

The wind field resulting from the adjustments of the initial guess wind described above is the Step 1 wind field. The second step of the procedure involves the introduction of observational data into the Step 1 wind field through an objective analysis procedure. An inverse-distance squared interpolation scheme is used, which weighs observational data heavily in the vicinity of the observational station, while the Step 1 wind field dominates the interpolated wind field in regions with no observational data. The resulting wind field is subject to smoothing, an optional adjustment of vertical velocities based on the O'Brien (1970) method, and divergence minimisation to produce final Step 2 wind fields.

Overview of CALPUFF

CALPUFF is a non-steady-state puff dispersion model. It accounts for spatial changes in the meteorological fields, variability in surface conditions such as (elevation, surface roughness, vegetation type, etc.), chemical transformation, wet removal due to rain and snow, dry deposition and terrain influences on plume interaction with the surface. CALPUFF can simulate the effects of time- and space-varying meteorological conditions on pollutant transport, transformation and removal. CALPUFF contains algorithms for near-source effects, such as building downwash, transitional plume rise, partial plume penetration, sub-grid scale terrain interactions, as well as longer range effects, such as pollutant removal (wet scavenging and dry deposition), chemical transformation, vertical wind shear, overwater transport and coastal interaction effects. It can accommodate arbitrarily-varying point source and gridded area source emissions. The major features of CALPUFF model are detailed below (Scire et al. 2000).

Major features of the CALPUFF model

- Source types
  - Point sources (constant or variable emissions)
  - Line Sources (constant or variable emissions)
  - Area Sources (constant or variable emissions)
  - Volume sources (constant or variable emissions)
- Non-steady-state emissions and meteorological conditions
  - Gridded 3D fields of meteorological variables
  - Spatially variable 3D fields of mixing height, friction velocity, convective velocity scale, Monin-Obukhov length, precipitation rate
  - Vertically and horizontally-varying turbulence and dispersion rates
  - Time-dependent source and emissions data
- Efficient sampling functions
  - Integrated puff formulation
  - Elongated puff (slug) formulation
- Dispersion coefficient options
  - Direct measures of sigma v and sigma w
  - Estimated values of sigma v and sigma w based on similarity theory
  - PG dispersion coefficients (rural areas)
  - McElroy Pooler dispersion coefficients (urban areas)
  - CTDM dispersion coefficients (neutral/stable)
- Vertical wind shear
  - Puff Splitting
  - Differential advection and dispersion
- Plume Rise
  - Partial penetration
  - Buoyant and momentum rise
  - Stack tip downwash effects

  - Vertical wind shear
  - Building downwash effects
- Building downwash
  - Huber-Snyder method
  - PRIME downwash
  - Schulman Scire method
- Dry deposition
  - Gases and particulate matter
  - Three options
    - Full treatment of space and time variations of deposition with a resistance model
    - User-specified diurnal cycles for each pollutant
    - No dry deposition
- Overwater and coastal interaction effects
  - Overwater boundary layer parameters
  - Abrupt change in meteorological conditions, plume dispersion at coastal boundary
  - Plume fumigation
  - Option to introduce sub grid scale TIBLs into coastal grid cells
- Chemical transformation options
  - Pseudo-first-order chemical mechanism for SO_2, sulfate (SO_4), NO_x, nitric acid (HNO_3), and nitrate (NO_3) (MESOPUFF II method)
  - User specified diurnal cycles of transformation rates
  - No chemical conversion
  - Wet Removal
  - Scavenging coefficient approach
  - Removal rate a function of precipitation intensity and precipitation type.

Overview of GRAL

Given the physical complexity of the rail line and the surrounding terrain, the use of a complex dispersion model able to predict concentrations in the near field is required. The common models used in Victoria for complex modelling scenarios (AERMOD and CALPUFF) do not perform well within 100m, in complex terrain and urban canyons; therefore, an alternative model is proposed. The GRAL model performs well in these environments has been used for the assessment of the detailed modelling scenarios.

GRAL is a Lagrangian Particle model developed at the Institute for Internal Combustion Engines and Thermodynamics, Technical University Graz, Austria specifically to assess the dispersion of pollutants from roadways and tunnel portals (Oettl et al. 2002; Oettl et al. 2003; Oettl et al. 2005). GRAL has been extensively evaluated against experimental data from five different tunnel portals both in flat and complex terrain, with high and low traffic volumes, namely the Enrei, Hitachi and Ninomiya tunnels in Japan (Oettl et al. 2003), and the Enrentalerbergtunnel in Austria (Oettl et al. 2002). GRAL has also been compared to other models (Atmospheric Dispersion Modelling System, Lagrangian Simulation of Aerosol-Transport).

Sulfur hexafluoride (SF_6) tracer experiments performed over two days in the vicinity of a road tunnel portal in Austria showed that the jet stream from the tunnel portals was highly dependent on the ambient wind field. The changing ambient wind field direction (meandering) causes the jet stream of the tunnel portal to change its position in the order of tens of metres, while the characteristic length scale of eddies evolving at the surface between the jet stream and the ambient wind field are of the order of some metres. This specific effect was found to be more important than the diffusion due to shear stresses along the surface between the jet stream and the ambient wind field. GRAL was developed from these experiments, and specifically describes these features in its modelling equations.

Of particular note, the GRAL model have algorithms that effectively consider dispersion in low wind speed conditions, which is a particular advantage over Gaussian plume models and for the consideration of fine scale modelling domains.

The GRAL model requires a range of data inputs that need to be defined prior to running the model. The data required for a run can be broadly categorised as follows:

- Terrain data
- Land use data
- Building data
- Meteorological data.

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Appendix D NO_x to NO_2 conversion

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT



Appendix D
NO_x to NO_2 conversion

One of the challenges of modelling NO_x emissions is determining the amount of NO_2 at a receiver, due to uncertainties in the conversion rates.

Several methods were proposed for evaluating the amount of NO_2 that is formed from NO. These include:

- Total conversion
- The Ambient Ratio Method (ARM) (0.75 is the US default value) when no measured nearby NO_x/NO_2 ratios are available
- OLM
- Jansenn's equations (which assume approximately 10 per cent of all NO_x is NO_2) – used in Australia and New Zealand
- Plume Volume Molar Ratio method.

All of these methods are referenced in the US EPA Guideline on Air Quality Models (GAQM) (US EPA 2017) and the Approved methods and guidance for the modelling and assessment of air pollutants in NSW (NSW EPA 2016).

NO_x to NO_2 conversion

In QLD, the oxidation of NO to NO_2 is typically assessed by three methods (method one, the most simple, to method three, the most complex). Method one, which assumes 100 per cent conversion of NO to NO_2, can be used in one of two ways. A Level 1 assessment uses maximum predicted NO_x concentrations (assuming $NO_x = NO_2$) and maximum ambient NO_2 concentrations to determine a cumulative NO_2 concentration. If the facility fails to meet the NO_2 impact assessment criteria, a Level two assessment is conducted, which again assumes 100 per cent conversion but with contemporaneous assessment of model predictions and ambient concentrations.

Method two is the OLM, where NO to NO_2 conversion is limited by the amount of O_3 available. The OLM uses a simple approach to the reaction chemistry; it assumes that O_3 and NO react to form NO_2 in proportion to their ground level concentrations. That is, for each hour:

- if O_3 < NO plume
- NO_2 plume = NO_2 initial + O_3
- $O_3 \geq$ NO plume, NO_2 plume = NO_x plume.

Method three uses an empirical relationship to convert NO to NO_2 based on the equation developed by Janssen et al. (1988). The conversion is based on the distance of the receiver downwind from the source, and can be used with various levels of refinement (i.e. using maxima or contemporaneous data).

NO_x to NO_2 assessment in the United States

In the United States, the first level recommended technique in the GAQM (US EPA 2017) is to assume the total conversion of NO to NO_2. This is the same first tier level as in the Approved methods and guidance for the modelling and assessment of air pollutants in NSW (NSW EPA 2016). It is a conservative, first-level technique, which may lead to unnecessary control in areas where the predicted impacts are close to ambient air quality criteria.

The Ambient Ratio Method (ARM) is the second-level technique recommended in the GAQM. The ARM is defined as the ratio of the average NO_2 and NO_x ambient concentrations measured at a representative site. It uses local monitoring or a default 75 per cent ratio to find the ambient equilibrium NO_2/NO_x ratio (annual average). Theoretically, equilibrium occurs when the rate of NO_2 formation equals the rate of dissociation of NO_2 by sunlight. Chu and Meyer (1991), who developed this technique, recommended that this monitoring be performed far away so that true equilibrium would occur. Unfortunately, ambient monitoring is usually insufficient for determining this ratio because ambient concentrations are frequently below the minimum monitoring threshold for NO_x (20 ppb). Further, if the monitoring is performed too close to an existing source, the ARM's assumption of equilibrium is violated and the monitoring results are not applicable to receivers further downwind.

The third-level tier is the OLM (stated above) and a Plume Volume Molar Ratio method (PVMRM). The PVMRM method better simulates the NO to NO_2 conversion chemistry during plume expansion and is particularly well suited for the receivers located close to sources where maximum modelled NO concentrations are usually predicted. The PVMRM method follows the chemistry of the main forward reaction of NO with O_3 as it occurs during expansion of a plume segment travelling downwind:

$$NO + O_3 \rightarrow NO_2 + O_2$$

This is accomplished by computing the number of moles of NO_x and O_3 that are contained within a plume segment as it reaches a receiver. Although the PVMRM follows the same chemical reactions as those used in the OLM, it uses both plume size and O_3 concentration to derive the amount of O_3 available for the reaction. NO_x moles are determined by emission rate and travel time through the plume segment. The number of O_3 moles is determined by the size of the plume segment and the measured background O_3 concentration. This plume segment always contains the same amount of primary NO_x emissions as it travels downwind. The amount of O_3 available for reaction, however, increases as the plume segment enlarges downwind. The last approach, which is not yet included in any US guideline, is based on an empirical approach of some 3,000 co-located NO_x and NO_2 monitors in Europe. The approach uses a scaled approach to NO_x bins of concentration levels. This method is included in CALPOST. It has been used on a case-by-case basis when all other methods fail.

Concerns with and likely conservatism of the OLM

The OLM employed by the NSW EPA (2017) was taken from the US EPA OLM, originally developed by Cole and Summerhays (1979) and Tikvart (1996). The method assumes that all the available O_3 in the atmosphere will react with NO in the plume until either all the O_3 or all the NO is used up. The approach is known to be conservative. Some of the reasons for its lack of robustness and conservatism are listed below:

- The OLM approach assumes that the atmospheric reaction is instant, whereas in reality the reaction takes place over a number of hours.
- The actual reactions of NO to NO_2 occur in proportion to the moles of each reactant rather than in proportion to the concentration assumed by the OLM. At constant volume, 1 ppm of a gas is proportional to 1 mole of a gas. This assumption is not valid in the open atmosphere, as there is virtually unlimited amount of O_3 available for reaction. As plumes expand downwind, more O_3 is available for reaction, and even lower concentrations of O_3 can react with NO in the plume.
- The OLM is further complicated as some of the NO_x is already converted to NO_2 upstream in the plume before it reaches the receiver.
- Studies have shown that the NO_x emission rates are extremely important with respect to the rate of conversion to NO_2. The size of the plume is not affected by the NOx emission rate, which means that there is the same amount of O_3 available for chemical conversion regardless of the NO_x emission rate. Larger NO_x emission rates lead to lower predicted ratios of NO_2/NO_x. Maximum impacts that occur at receivers located further away have high predicted NO_2/NO_x ratios. Further emissions emitted into stable (narrow) plumes will have less conversion to NO_2 compared to those emissions emitted into less stable (wider) plumes. The OLM does not take the NO_x emission rate or plume size into consideration.

- The OLM can only be used on one plume at a time. The US EPA states that the OLM should be used with a “plume-by-plume” approach. This is a big limitation to a facility with lots of different plumes. The OLM will therefore be very conservative for close in NO_2 impacts for large multi plume sources. The OLM may not be conservative for single plumes downwind, where low concentrations of O_3 can still react with the plume. The OLM is expected to be conservative during daylight hours when the photochemical equilibrium reverses the oxidation of NO by O_3. It is also expected to be conservative during stable and night conditions when both NO_2 and O_3 are removed by reaction with vegetation and other surfaces.

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Appendix E Detailed dispersion modelling results

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Appendix E
Detailed Dispersion Modelling Results

Table E.1 Predicted cumulative ground level concentrations (µg/m³) at discrete sensitive receptors (peak train scenario, with veneering)

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
Note: Receptor coordinates are provided as UTM coordinates (rather than latitude and longitude) as this is the format as exported by CALPUFF. Receptors within the EIS disturbance footprint are noted in the Receptor ID column.								
R_1	384619	6957640	8.5	57.7	17.2	17.7	6.5	7.8
R_2	384758	6957580	8.5	57.9	17.2	17.7	6.5	7.8
R_3	384989	6959660	8.0	57.5	17.1	17.6	6.5	7.7
R_4	385084	6957470	8.6	58.3	17.2	17.8	6.5	7.9
R_5	385154	6959610	8.0	57.5	17.1	17.6	6.5	7.7
R_6	385204	6959520	8.1	57.5	17.1	17.6	6.5	7.8
R_7	385285	6959640	8.0	57.5	17.1	17.6	6.5	7.7
R_8	385613	6959850	8.0	57.5	17.1	17.6	6.5	7.7
R_9	385700	6959555	8.1	57.5	17.1	17.7	6.5	7.8
R_10	385782	6959970	8.0	57.5	17.1	17.6	6.5	7.7
R_11	385782	6959970	8.0	57.5	17.1	17.6	6.5	7.7
R_12	385821	6956780	9.0	63.6	17.2	17.8	6.5	7.9
R_13	385835	6959531	8.1	57.5	17.1	17.7	6.5	7.8
R_14	385840	6958370	11.4	72.8	17.6	19.4	6.7	8.5
R_15	385895	6957090	8.9	63.8	17.2	17.8	6.5	7.9
R_16	385895	6957090	8.9	63.8	17.2	17.8	6.5	7.9
R_17	385929	6958230	9.7	71.5	17.4	19.0	6.6	8.3
R_18	386017	6959770	8.0	57.5	17.1	17.6	6.5	7.7
R_19	386038	6957080	9.0	65.7	17.2	17.8	6.5	8.0
R_20	386069	6958176	9.6	71.6	17.4	19.0	6.6	8.2
R_21	386074	6956850	9.1	68.2	17.2	17.8	6.5	8.0
R_22	386083	6958281	10.4	72.6	17.6	19.6	6.7	8.5

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
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Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_23	386131	6959310	8.2	57.5	17.1	17.8	6.5	7.8
R_24	386159	6956810	9.2	68.6	17.2	17.8	6.5	8.0
R_25	386200	6959130	8.2	57.5	17.1	17.9	6.5	7.9
R_26	386227	6958163	10.0	70.1	17.5	19.3	6.6	8.3
R_27	386249	6957000	9.1	67.8	17.2	17.8	6.5	8.0
R_28	386302	6956410	9.7	69.1	17.2	17.9	6.6	8.1
R_29	386308	6956670	9.4	69.2	17.2	17.9	6.6	8.0
R_30	386308	6956670	9.4	69.2	17.2	17.9	6.6	8.0
R_31	386395	6957390	9.0	63.6	17.2	17.9	6.6	7.9
R_32	386395	6956230	10.0	70.3	17.2	17.9	6.6	8.1
R_33	386472	6959400	8.2	59.8	17.1	17.8	6.5	7.8
R_34	386561	6959330	8.2	59.0	17.1	17.8	6.5	7.8
R_35	386752	6959250	8.2	59.1	17.1	17.8	6.5	7.8
R_36	386861	6956090	10.7	74.8	17.2	18.1	6.6	8.2
R_37	386867	6956340	10.3	69.1	17.2	18.0	6.6	8.1
R_38	386936	6956150	10.7	70.7	17.2	18.0	6.6	8.2
R_39	386961	6959270	8.2	60.0	17.1	17.8	6.5	7.8
R_40	387028	6959930	8.0	61.4	17.1	17.6	6.5	7.8
R_41	387028	6959930	8.0	61.4	17.1	17.6	6.5	7.8
R_42	387158	6959180	8.2	60.3	17.1	17.8	6.5	7.9
R_43	387170	6959230	8.2	60.2	17.1	17.8	6.5	7.8
R_44	387206	6959350	8.2	61.0	17.1	17.7	6.5	7.8
R_45	387206	6959440	8.1	61.9	17.1	17.7	6.5	7.8
R_46	387207	6959400	8.1	61.9	17.1	17.7	6.5	7.8
R_47	387221	6959490	8.1	62.4	17.1	17.7	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
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Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_48	387225	6959270	8.2	61.2	17.1	17.8	6.5	7.8
R_49	387225	6959300	8.2	61.1	17.1	17.8	6.5	7.8
R_50	387231	6959700	8.1	64.4	17.1	17.7	6.5	7.8
R_51	387231	6959700	8.1	64.4	17.1	17.7	6.5	7.8
R_52	387237	6959520	8.1	62.6	17.1	17.7	6.5	7.8
R_53	387242	6959130	8.3	61.8	17.1	17.8	6.5	7.9
R_54	387298	6959200	8.2	62.5	17.1	17.8	6.5	7.8
R_55	387329	6959240	8.2	62.4	17.1	17.8	6.5	7.8
R_56	387338	6959300	8.2	62.3	17.1	17.8	6.5	7.8
R_57	387356	6959350	8.2	63.0	17.1	17.7	6.5	7.8
R_58	387357	6959480	8.1	62.0	17.1	17.7	6.5	7.8
R_59	387365	6959390	8.1	63.1	17.1	17.7	6.5	7.8
R_60	387370	6959490	8.1	62.5	17.1	17.7	6.5	7.8
R_61	387377	6959460	8.1	62.6	17.1	17.7	6.5	7.8
R_62	387378	6959550	8.1	63.8	17.1	17.7	6.5	7.8
R_63	387384	6959120	8.3	65.1	17.1	17.8	6.5	7.9
R_64	387388	6959150	8.2	65.3	17.1	17.8	6.5	7.9
R_65	387407	6959580	8.1	65.2	17.1	17.7	6.5	7.8
R_66	387418	6959220	8.2	66.4	17.1	17.8	6.5	7.8
R_67	387421	6959640	8.1	65.3	17.1	17.7	6.5	7.8
R_68	387430	6959270	8.2	67.3	17.1	17.8	6.5	7.8
R_69	387431	6959720	8.1	65.5	17.1	17.6	6.5	7.8
R_70	387433	6959690	8.1	65.9	17.1	17.6	6.5	7.8
R_71	387441	6959460	8.1	65.9	17.1	17.7	6.5	7.8
R_72	387444	6959780	8.0	65.1	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_73	387447	6959310	8.2	67.5	17.1	17.7	6.5	7.8
R_74	387469	6959400	8.1	67.5	17.1	17.7	6.5	7.8
R_75	387479	6959480	8.1	66.6	17.1	17.7	6.5	7.8
R_76	387481	6959860	8.0	64.5	17.1	17.6	6.5	7.8
R_77	387488	6959940	8.0	64.0	17.1	17.6	6.5	7.8
R_78	387492	6959900	8.0	64.2	17.1	17.6	6.5	7.8
R_79	387504	6959530	8.1	67.5	17.1	17.7	6.5	7.8
R_80	387506	6959570	8.1	67.6	17.1	17.7	6.5	7.8
R_81	387510	6959690	8.1	66.6	17.1	17.6	6.5	7.8
R_82	387514	6958990	8.3	68.0	17.1	17.9	6.5	7.9
R_83	387518	6959000	8.3	68.1	17.1	17.9	6.5	7.9
R_84	387530	6959720	8.1	66.6	17.1	17.6	6.5	7.8
R_85	387535	6959630	8.1	67.5	17.1	17.7	6.5	7.8
R_86	387548	6959830	8.0	65.3	17.1	17.6	6.5	7.8
R_87	387563	6959770	8.0	66.6	17.1	17.6	6.5	7.8
R_88	387574	6959970	8.0	64.2	17.1	17.6	6.5	7.8
R_89	387579	6958020	10.0	73.3	17.5	19.9	6.6	8.5
R_90	387581	6959880	8.0	65.3	17.1	17.6	6.5	7.8
R_91	387618	6959570	8.1	67.8	17.1	17.7	6.5	7.8
R_92	387654	6958760	8.4	66.3	17.2	18.0	6.5	8.0
R_93	387661	6958750	8.4	66.1	17.2	18.0	6.5	8.0
R_94	387673	6958670	8.5	66.1	17.2	18.0	6.5	8.0
R_95	387692	6958030	9.8	73.2	17.4	19.4	6.6	8.4
R_96	387747	6959970	8.0	65.4	17.1	17.6	6.5	7.8
R_97	387822	6958100	9.5	72.8	17.3	19.2	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_98	387837	6957897	10.9	83.0	17.7	20.8	6.7	8.9
R_99	387933	6959630	8.1	68.0	17.1	17.7	6.5	7.8
R_100	387965	6959660	8.1	68.0	17.1	17.6	6.5	7.8
R_101	387978	6959590	8.1	68.1	17.1	17.7	6.5	7.8
R_102	387979	6959690	8.1	67.9	17.1	17.6	6.5	7.8
R_103	387982	6959740	8.1	67.8	17.1	17.6	6.5	7.8
R_104	387983	6959820	8.0	67.7	17.1	17.6	6.5	7.8
R_105	387992	6959780	8.0	67.8	17.1	17.6	6.5	7.8
R_106	388013	6958170	9.1	71.4	17.3	18.7	6.6	8.2
R_107	388028	6959620	8.1	68.1	17.1	17.6	6.5	7.8
R_108	388034	6959570	8.1	68.3	17.1	17.7	6.5	7.8
R_109	388055	6959790	8.0	67.8	17.1	17.6	6.5	7.8
R_110	388056	6959730	8.1	67.9	17.1	17.6	6.5	7.8
R_111	388066	6959820	8.0	67.7	17.1	17.6	6.5	7.8
R_112	388071	6958440	8.6	69.4	17.2	18.2	6.5	8.1
R_113	388079	6959680	8.1	68.0	17.1	17.6	6.5	7.8
R_114	388084	6959610	8.1	68.2	17.1	17.7	6.5	7.8
R_115	388088	6958950	8.3	68.4	17.1	17.9	6.5	7.9
R_116	388106	6959810	8.0	67.8	17.1	17.6	6.5	7.8
R_117	388117	6959690	8.1	68.1	17.1	17.6	6.5	7.8
R_118	388128	6959600	8.1	68.3	17.1	17.7	6.5	7.8
R_119	388139	6959800	8.0	67.8	17.1	17.6	6.5	7.8
R_120	388161	6959320	8.2	69.2	17.1	17.7	6.5	7.8
R_121	388175	6959320	8.2	69.2	17.1	17.7	6.5	7.8
R_122	388180	6959670	8.1	68.2	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_123	388181	6959780	8.0	67.9	17.1	17.6	6.5	7.8
R_124	388193	6959600	8.1	68.4	17.1	17.7	6.5	7.8
R_125	388217	6959680	8.1	68.2	17.1	17.6	6.5	7.8
R_126	388218	6958670	8.4	67.9	17.2	18.0	6.5	8.0
R_127	388221	6959780	8.0	67.9	17.1	17.6	6.5	7.8
R_128	388228	6959590	8.1	68.4	17.1	17.7	6.5	7.8
R_129	388247	6958870	8.3	68.5	17.1	17.9	6.5	7.9
R_130	388252	6959610	8.1	68.4	17.1	17.6	6.5	7.8
R_131	388264	6958690	8.4	68.0	17.2	18.0	6.5	8.0
R_132	388264	6959050	8.3	69.7	17.1	17.8	6.5	7.9
R_133	388265	6958940	8.3	68.8	17.1	17.9	6.5	7.9
R_134	388268	6959680	8.1	68.2	17.1	17.6	6.5	7.8
R_135	388276	6958800	8.4	68.4	17.1	17.9	6.5	7.9
R_136	388278	6959130	8.2	70.1	17.1	17.8	6.5	7.9
R_137	388298	6958910	8.3	68.7	17.1	17.9	6.5	7.9
R_138	388299	6959770	8.0	68.0	17.1	17.6	6.5	7.8
R_139	388303	6958660	8.5	68.1	17.2	18.0	6.5	8.0
R_140	388304	6959720	8.1	68.2	17.1	17.6	6.5	7.8
R_141	388305	6959610	8.1	68.4	17.1	17.6	6.5	7.8
R_142	388311	6959030	8.3	69.9	17.1	17.8	6.5	7.9
R_143	388313	6958800	8.4	68.5	17.1	17.9	6.5	7.9
R_144	388325	6959120	8.2	70.3	17.1	17.8	6.5	7.9
R_145	388334	6959620	8.1	68.4	17.1	17.6	6.5	7.8
R_146	388336	6958880	8.3	68.5	17.1	17.9	6.5	7.9
R_147	388345	6958550	8.6	72.1	17.2	18.1	6.5	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_148	388348	6958680	8.4	68.2	17.2	18.0	6.5	8.0
R_149	388354	6958780	8.4	68.5	17.1	17.9	6.5	8.0
R_150	388354	6959090	8.2	70.3	17.1	17.8	6.5	7.9
R_151	388357	6958990	8.3	69.7	17.1	17.8	6.5	7.9
R_152	388364	6958500	8.6	74.1	17.2	18.2	6.5	8.1
R_153	388372	6959700	8.1	68.3	17.1	17.6	6.5	7.8
R_154	388373	6958850	8.3	68.7	17.1	17.9	6.5	7.9
R_155	388382	6959740	8.1	68.2	17.1	17.6	6.5	7.8
R_156	388389	6959620	8.1	68.5	17.1	17.6	6.5	7.8
R_157	388393	6958760	8.4	68.7	17.1	17.9	6.5	8.0
R_158	388395	6958680	8.5	69.0	17.2	18.0	6.5	8.0
R_159	388395	6958980	8.3	70.0	17.1	17.8	6.5	7.9
R_160	388401	6959080	8.2	70.7	17.1	17.8	6.5	7.9
R_161	388409	6959160	8.2	70.5	17.1	17.8	6.5	7.9
R_162	388416	6958830	8.4	68.7	17.1	17.9	6.5	7.9
R_163	388418	6959630	8.1	68.5	17.1	17.6	6.5	7.8
R_164	388428	6958970	8.3	70.0	17.1	17.8	6.5	7.9
R_165	388439	6959050	8.2	70.3	17.1	17.8	6.5	7.9
R_166	388453	6959690	8.1	68.3	17.1	17.6	6.5	7.8
R_167	388453	6959630	8.1	68.5	17.1	17.6	6.5	7.8
R_168	388458	6958840	8.4	69.0	17.1	17.9	6.5	7.9
R_169	388460	6958690	8.5	69.1	17.2	18.0	6.5	8.0
R_170	388464	6958740	8.4	69.1	17.2	18.0	6.5	8.0
R_171	388474	6958950	8.3	69.6	17.1	17.8	6.5	7.9
R_172	388478	6958840	8.4	69.1	17.1	17.9	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_173	388484	6959030	8.3	70.6	17.1	17.8	6.5	7.9
R_174	388492	6958830	8.4	69.2	17.1	17.9	6.5	7.9
R_175	388497	6959670	8.1	68.4	17.1	17.6	6.5	7.8
R_176	388507	6959590	8.1	68.7	17.1	17.6	6.5	7.8
R_177	388518	6958930	8.3	69.4	17.1	17.8	6.5	7.9
R_178	388519	6959020	8.3	70.7	17.1	17.8	6.5	7.9
R_179	388526	6959090	8.2	70.5	17.1	17.8	6.5	7.9
R_180	388527	6959130	8.2	70.8	17.1	17.8	6.5	7.9
R_181	388541	6959580	8.1	68.8	17.1	17.6	6.5	7.8
R_182	388545	6959670	8.1	68.5	17.1	17.6	6.5	7.8
R_183	388555	6958850	8.4	69.2	17.1	17.9	6.5	7.9
R_184	388557	6958750	8.4	69.1	17.2	17.9	6.5	8.0
R_185	388567	6958790	8.4	69.2	17.1	17.9	6.5	7.9
R_186	388585	6958960	8.3	70.0	17.1	17.8	6.5	7.9
R_187	388586	6958920	8.3	69.5	17.1	17.8	6.5	7.9
R_188	388587	6958280	9.0	80.2	17.2	18.6	6.6	8.2
R_189	388590	6958880	8.3	69.3	17.1	17.9	6.5	7.9
R_190	388593	6959580	8.1	68.8	17.1	17.6	6.5	7.8
R_191	388598	6959000	8.3	70.6	17.1	17.8	6.5	7.9
R_192	388606	6959040	8.3	70.7	17.1	17.8	6.5	7.9
R_193	388610	6959080	8.2	71.4	17.1	17.8	6.5	7.9
R_194	388615	6959130	8.2	71.1	17.1	17.8	6.5	7.9
R_195	388617	6959660	8.1	68.5	17.1	17.6	6.5	7.8
R_196	388632	6959160	8.2	71.0	17.1	17.8	6.5	7.9
R_197	388655	6958810	8.4	69.2	17.1	17.9	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_198	388684	6959460	8.1	69.4	17.1	17.7	6.5	7.8
R_199	388701	6958870	8.3	69.2	17.1	17.8	6.5	7.9
R_200	388703	6958830	8.4	69.2	17.1	17.9	6.5	7.9
R_201	388707	6958910	8.3	69.2	17.1	17.8	6.5	7.9
R_202	388708	6958940	8.3	69.5	17.1	17.8	6.5	7.9
R_203	388718	6958990	8.3	70.7	17.1	17.8	6.5	7.9
R_204	388730	6959390	8.1	69.8	17.1	17.7	6.5	7.8
R_205	388742	6959460	8.1	69.4	17.1	17.7	6.5	7.8
R_206	388743	6959070	8.2	71.0	17.1	17.8	6.5	7.9
R_207	388744	6959120	8.2	71.4	17.1	17.8	6.5	7.9
R_208	388747	6959500	8.1	69.2	17.1	17.7	6.5	7.8
R_209	388750	6959200	8.2	71.0	17.1	17.7	6.5	7.9
R_210	388751	6959030	8.3	71.2	17.1	17.8	6.5	7.9
R_211	388755	6959150	8.2	71.3	17.1	17.8	6.5	7.9
R_212	388756	6959370	8.1	69.9	17.1	17.7	6.5	7.8
R_213	388763	6957823	11.8	86.3	17.7	21.2	6.7	9.1
R_214	388775	6956860	11.3	114.5	17.3	18.7	6.6	8.9
R_215	388784	6959450	8.1	69.5	17.1	17.7	6.5	7.8
R_216	388787	6958860	8.4	69.3	17.1	17.9	6.5	7.9
R_217	388794	6958910	8.3	69.3	17.1	17.8	6.5	7.9
R_218	388797	6959360	8.1	70.0	17.1	17.7	6.5	7.8
R_219	388809	6959490	8.1	69.3	17.1	17.7	6.5	7.8
R_220	388811	6958950	8.3	69.7	17.1	17.8	6.5	7.9
R_221	388813	6959120	8.2	71.5	17.1	17.8	6.5	7.9
R_222	388813	6959190	8.2	71.1	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_223	388818	6958990	8.3	70.6	17.1	17.8	6.5	7.9
R_224	388823	6957820	12.1	86.8	17.8	21.6	6.8	9.2
R_225	388823	6959360	8.1	70.0	17.1	17.7	6.5	7.8
R_226	388824	6958840	8.4	69.3	17.1	17.9	6.5	7.9
R_227	388826	6959030	8.3	70.9	17.1	17.8	6.5	7.9
R_228	388826	6959440	8.1	69.5	17.1	17.7	6.5	7.8
R_229	388831	6959490	8.1	69.3	17.1	17.7	6.5	7.8
R_230	388850	6959080	8.2	71.5	17.1	17.8	6.5	7.9
R_231	388851	6957828	11.9	86.9	17.7	21.5	6.8	9.2
R_232	388860	6959150	8.2	71.4	17.1	17.8	6.5	7.9
R_233	388865	6959430	8.1	69.6	17.1	17.7	6.5	7.8
R_234	388868	6959330	8.1	70.2	17.1	17.7	6.5	7.8
R_235	388885	6959460	8.1	69.5	17.1	17.7	6.5	7.8
R_236	388908	6959420	8.1	69.7	17.1	17.7	6.5	7.8
R_237	388915	6959360	8.1	70.0	17.1	17.7	6.5	7.8
R_238	388928	6959480	8.1	69.4	17.1	17.7	6.5	7.8
R_239	388960	6959360	8.1	70.0	17.1	17.7	6.5	7.8
R_240	388965	6959000	8.3	73.0	17.1	17.8	6.5	7.9
R_241	388972	6959470	8.1	69.4	17.1	17.7	6.5	7.8
R_242	388977	6959410	8.1	69.7	17.1	17.7	6.5	7.8
R_243	388984	6959360	8.1	70.0	17.1	17.7	6.5	7.8
R_244	389023	6959460	8.1	69.5	17.1	17.7	6.5	7.8
R_245	389029	6957479	10.9	101.5	17.4	19.1	6.6	8.9
R_246	389041	6959530	8.1	69.1	17.1	17.7	6.5	7.8
R_247	389049	6959410	8.1	69.7	17.1	17.7	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_248	389050	6959360	8.1	70.0	17.1	17.7	6.5	7.8
R_249	389064	6959450	8.1	69.5	17.1	17.7	6.5	7.8
R_250	389135	6958530	8.7	85.2	17.2	18.2	6.5	8.2
R_251	389135	6957470	10.8	103.8	17.3	19.2	6.6	9.0
R_252	389153	6957867	11.8	91.6	17.6	21.2	6.7	9.0
R_253	389153	6958870	8.3	74.3	17.1	17.8	6.5	7.9
R_254	389166	6958110	9.4	87.1	17.3	18.9	6.6	8.4
R_255	389186	6959770	8.1	68.3	17.1	17.7	6.5	7.8
R_256	389187	6958810	8.4	74.5	17.1	17.9	6.5	7.9
R_257	389216	6958890	8.3	75.5	17.1	17.8	6.5	7.9
R_258	389272	6958800	8.4	76.2	17.1	17.9	6.5	7.9
R_259	389279	6957880	12.2	98.2	17.6	20.7	6.7	9.0
R_260	389295	6958640	8.5	86.1	17.2	18.0	6.5	8.0
R_261	389304	6958165	9.3	98.6	17.3	19.0	6.6	8.5
R_262	389312	6958770	8.4	76.9	17.1	17.9	6.5	7.9
R_263	389346	6958750	8.4	77.5	17.1	17.9	6.5	8.0
R_264	389347	6956110	12.0	110.4	17.2	18.5	6.6	8.7
R_265	389369	6958520	8.7	112.4	17.2	18.2	6.5	8.2
R_266	389377	6955840	10.2	79.6	17.2	18.0	6.6	8.2
R_267	389382	6958730	8.4	78.2	17.1	17.9	6.5	8.0
R_268	389403	6957881	13.0	101.2	17.7	20.6	6.8	9.1
R_269	389419	6958710	8.4	79.0	17.1	17.9	6.5	8.0
R_270	389445	6958490	8.8	129.3	17.2	18.3	6.5	8.3
R_271	389445	6958490	8.8	129.3	17.2	18.3	6.5	8.3
R_272	389455	6958690	8.5	79.6	17.2	17.9	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_273	389458	6958560	8.6	111.1	17.2	18.1	6.5	8.2
R_274	389478	6957903	12.8	99.6	17.6	20.5	6.7	9.2
R_275	389492	6958660	8.5	80.2	17.2	18.0	6.5	8.0
R_276	389512	6958035	10.1	101.9	17.4	19.5	6.6	8.8
R_277	389575	6958610	8.6	86.0	17.2	18.1	6.5	8.1
R_278	389605	6958800	8.4	75.3	17.1	18.0	6.5	8.0
R_279	389607	6957293	10.0	89.9	17.2	18.3	6.6	8.3
R_280	389614	6958660	8.5	80.9	17.2	18.1	6.5	8.1
R_281	389616	6958700	8.5	79.8	17.1	18.0	6.5	8.1
R_282	389619	6958590	8.6	87.8	17.2	18.2	6.5	8.2
R_283	389651	6957345	10.0	92.0	17.2	18.3	6.6	8.3
R_284	389686	6958540	8.7	96.1	17.2	18.3	6.5	8.3
R_285	389707	6958590	8.6	86.3	17.2	18.2	6.5	8.2
R_286	389718	6958630	8.5	85.0	17.2	18.1	6.5	8.2
R_287	389732	6958670	8.5	83.8	17.2	18.1	6.5	8.1
R_288	389744	6959060	8.3	75.3	17.1	17.9	6.5	8.0
R_289	389744	6958520	8.7	90.7	17.2	18.3	6.5	8.3
R_290	389748	6959200	8.2	73.6	17.1	17.8	6.5	7.9
R_291	389755	6958710	8.5	82.8	17.1	18.0	6.5	8.1
R_292	389761	6959130	8.2	74.5	17.1	17.8	6.5	7.9
R_293	389765	6958740	8.4	82.1	17.1	18.0	6.5	8.1
R_294	389779	6958500	8.7	90.7	17.2	18.3	6.5	8.3
R_295	389781	6955830	10.3	101.0	17.2	18.3	6.6	8.4
R_296	389781	6955890	10.6	101.3	17.2	18.3	6.6	8.5
R_297	389782	6955840	10.3	101.0	17.2	18.3	6.6	8.5

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_298	389782	6955840	10.3	101.0	17.2	18.3	6.6	8.5
R_299	389786	6958830	8.4	80.2	17.1	18.0	6.5	8.0
R_300	389788	6955860	10.4	101.2	17.2	18.3	6.6	8.5
R_301	389788	6955860	10.4	101.2	17.2	18.3	6.6	8.5
R_302	389797	6955950	11.0	101.9	17.2	18.4	6.6	8.6
R_303	389799	6955890	10.6	101.4	17.2	18.3	6.6	8.5
R_304	389814	6955850	10.4	101.3	17.2	18.3	6.6	8.5
R_305	389814	6958480	8.8	111.4	17.2	18.4	6.5	8.3
R_306	389814	6958560	8.6	110.5	17.2	18.2	6.5	8.2
R_307	389816	6957243	10.0	85.1	17.2	18.3	6.6	8.4
R_308	389817	6955880	10.6	101.5	17.2	18.3	6.6	8.5
R_309	389824	6956820	11.2	96.7	17.2	18.7	6.6	8.8
R_310	389824	6958860	8.4	89.0	17.1	17.9	6.5	8.0
R_311	389824	6958860	8.4	89.0	17.1	17.9	6.5	8.0
R_312	389825	6955850	10.4	101.4	17.2	18.3	6.6	8.5
R_313	389829	6955880	10.6	101.6	17.2	18.3	6.6	8.5
R_314	389839	6958600	8.6	112.0	17.2	18.1	6.5	8.2
R_315	389840	6955850	10.5	101.5	17.2	18.3	6.6	8.5
R_316	389846	6955880	10.6	101.7	17.2	18.3	6.6	8.5
R_317	389848	6958640	8.5	111.7	17.2	18.1	6.5	8.1
R_318	389857	6955840	10.4	101.6	17.2	18.3	6.6	8.4
R_319	389858	6958680	8.5	111.5	17.2	18.1	6.5	8.1
R_320	389860	6956980	10.5	80.4	17.2	18.2	6.6	8.3
R_321	389861	6955990	11.4	102.6	17.2	18.5	6.6	8.7
R_322	389862	6955880	10.6	101.8	17.2	18.3	6.6	8.5

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_323	389863	6958740	8.4	110.9	17.1	18.0	6.5	8.1
R_324	389866	6958450	8.8	118.8	17.2	18.5	6.5	8.3
R_325	389871	6957027	10.3	78.4	17.2	18.1	6.6	8.2
R_326	389875	6958850	8.4	109.1	17.1	17.9	6.5	8.0
R_327	389875	6957581	10.4	129.6	17.3	19.5	6.6	9.3
R_328	389895	6955850	10.5	101.9	17.2	18.3	6.6	8.5
R_329	389899	6957165	10.1	79.2	17.2	18.0	6.6	8.1
R_330	389901	6958430	8.9	139.3	17.2	18.6	6.5	8.4
R_331	389902	6955880	10.7	102.1	17.2	18.3	6.6	8.5
R_332	389902	6958780	8.4	111.8	17.1	18.0	6.5	8.0
R_333	389908	6955920	10.9	102.3	17.2	18.4	6.6	8.6
R_334	389909	6957620	10.7	134.5	17.4	19.7	6.6	9.5
R_335	389915	6958860	8.4	110.7	17.1	17.9	6.5	8.0
R_336	389918	6955840	10.5	102.0	17.2	18.2	6.6	8.4
R_337	389921	6957293	9.9	86.3	17.2	18.1	6.6	8.1
R_338	389922	6955870	10.6	102.2	17.2	18.3	6.6	8.5
R_339	389926	6958540	8.7	119.1	17.2	18.2	6.5	8.2
R_340	389926	6955920	11.0	102.4	17.2	18.4	6.6	8.6
R_341	389933	6955850	10.5	102.1	17.2	18.3	6.6	8.4
R_342	389936	6958410	9.0	141.6	17.2	18.7	6.5	8.5
R_343	389937	6955870	10.7	102.2	17.2	18.3	6.6	8.5
R_344	389939	6957655	11.0	135.9	17.4	20.2	6.7	10.0
R_345	389943	6955920	11.0	102.5	17.2	18.4	6.6	8.6
R_346	389945	6958500	8.8	126.6	17.2	18.3	6.5	8.3
R_347	389951	6956878	10.8	94.1	17.2	18.4	6.6	8.5

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_348	389951	6955840	10.5	102.2	17.2	18.2	6.6	8.4
R_349	389954	6955870	10.7	102.4	17.2	18.3	6.6	8.5
R_350	389955	6958860	8.4	111.4	17.1	17.9	6.5	8.0
R_351	389959	6955980	11.5	102.9	17.2	18.5	6.6	8.7
R_352	389961	6955920	11.0	102.6	17.2	18.4	6.6	8.6
R_353	389962	6957603	10.5	124.2	17.3	19.6	6.6	9.4
R_354	389966	6957574	10.3	117.2	17.3	19.3	6.6	9.1
R_355	389967	6955840	10.5	102.3	17.2	18.2	6.6	8.4
R_356	389967	6958580	8.6	118.4	17.2	18.2	6.5	8.1
R_357	389968	6958390	9.1	142.8	17.2	18.8	6.6	8.6
R_358	389969	6955870	10.7	102.4	17.2	18.3	6.6	8.5
R_359	389974	6958620	8.6	116.8	17.2	18.1	6.5	8.1
R_360	389975	6955920	11.0	102.7	17.2	18.4	6.6	8.6
R_361	389980	6958670	8.5	115.1	17.2	18.0	6.5	8.0
R_362	389980	6957663	11.0	139.8	17.4	20.7	6.6	10.4
R_363	389985	6955870	10.7	102.5	17.2	18.3	6.6	8.5
R_364	389991	6955910	10.9	102.7	17.2	18.3	6.6	8.5
R_365	389994	6958780	8.4	112.8	17.1	17.9	6.5	8.0
R_366	389994	6958780	8.4	112.8	17.1	17.9	6.5	8.0
R_367	389998	6958720	8.5	113.8	17.1	18.0	6.5	8.0
R_368	390000	6955860	10.6	102.5	17.2	18.2	6.6	8.4
R_369	390007	6955910	11.0	102.8	17.2	18.3	6.6	8.5
R_370	390016	6958870	8.4	111.0	17.1	17.9	6.5	7.9
R_371	390017	6957460	9.9	102.8	17.2	18.5	6.6	8.5
R_372	390020	6955860	10.6	102.5	17.2	18.2	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_373	390022	6955910	11.0	102.8	17.2	18.3	6.6	8.5
R_374	390035	6955900	10.9	102.8	17.2	18.3	6.6	8.5
R_375	390038	6955860	10.6	102.6	17.2	18.2	6.6	8.4
R_376	390048	6955910	11.0	102.9	17.2	18.3	6.6	8.5
R_377	390075	6955850	10.6	102.6	17.2	18.2	6.6	8.3
R_378	390075	6955900	10.9	102.9	17.2	18.3	6.6	8.4
R_379	390080	6957720	11.3	139.6	17.5	20.9	6.7	10.5
R_380	390083	6957701	11.0	137.4	17.4	20.7	6.6	10.2
R_381	390087	6958380	9.1	110.9	17.2	18.8	6.6	8.6
R_382	390090	6955900	10.9	103.0	17.2	18.2	6.6	8.4
R_383	390097	6958530	8.7	110.0	17.2	18.3	6.5	8.2
R_384	390103	6958630	8.6	108.3	17.2	18.1	6.5	8.1
R_385	390108	6958670	8.5	103.8	17.2	18.0	6.5	8.0
R_386 (within Project footprint)	390110	6957961	13.8	141.0	17.7	24.4	6.8	13.7
R_387	390113	6958710	8.5	101.2	17.1	18.0	6.5	8.0
R_388	390119	6957716	11.1	135.6	17.4	19.8	6.7	9.4
R_389	390119	6958740	8.5	98.0	17.1	18.0	6.5	8.0
R_390	390124	6958780	8.4	94.7	17.1	17.9	6.5	8.0
R_391	390127	6958820	8.4	92.3	17.1	17.9	6.5	7.9
R_392	390133	6957305	10.0	90.1	17.2	18.1	6.6	8.2
R_393	390137	6958890	8.4	87.1	17.1	17.8	6.5	7.9
R_394	390142	6957738	11.4	135.6	17.5	19.9	6.7	9.3
R_395	390165	6957760	11.7	135.6	17.6	20.3	6.7	9.7
R_396	390174	6958480	8.8	88.7	17.2	18.4	6.5	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_397	390197	6957923	12.9	171.9	17.7	22.6	6.8	11.0
R_398	390199	6958370	9.1	102.2	17.2	18.8	6.6	8.5
R_399	390201	6958590	8.6	76.8	17.2	18.2	6.5	8.1
R_400	390201	6958890	8.4	73.7	17.1	17.8	6.5	7.9
R_401	390202	6955800	10.4	102.7	17.2	18.1	6.6	8.3
R_402	390205	6959000	8.3	72.9	17.1	17.8	6.5	7.9
R_403	390210	6957770	11.8	128.2	17.6	20.5	6.7	9.7
R_404	390214	6955870	10.7	103.0	17.2	18.3	6.6	8.5
R_405	390217	6958480	8.8	98.1	17.2	18.4	6.5	8.3
R_406	390218	6957733	11.1	120.4	17.5	19.6	6.7	8.9
R_407	390226	6958640	8.6	75.5	17.2	18.1	6.5	8.1
R_408	390228	6955930	11.1	113.6	17.2	18.5	6.6	8.7
R_409	390231	6958680	8.5	75.1	17.2	18.0	6.5	8.0
R_410	390235	6957920	12.4	167.2	17.7	22.3	6.8	10.4
R_411	390236	6958720	8.5	74.8	17.1	18.0	6.5	8.0
R_412	390242	6958760	8.5	74.6	17.1	17.9	6.5	8.0
R_413	390243	6958890	8.4	73.8	17.1	17.8	6.5	7.9
R_414	390248	6958580	8.6	85.7	17.2	18.2	6.5	8.1
R_415	390251	6958800	8.4	74.2	17.1	17.9	6.5	8.0
R_416	390260	6958470	8.8	98.7	17.2	18.4	6.5	8.3
R_417	390268	6958090	10.8	121.7	17.4	20.3	6.6	9.6
R_418	390273	6957048	10.6	86.2	17.2	18.4	6.6	8.5
R_419	390281	6958310	9.5	118.5	17.2	19.1	6.6	8.6
R_420	390284	6958900	8.4	73.4	17.1	17.8	6.5	7.9
R_421	390287	6957705	10.7	111.3	17.5	19.4	6.7	8.7

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_422	390291	6956170	15.6	157.8	17.4	20.2	6.8	10.4
R_423	390293	6957662	10.4	104.2	17.4	19.1	6.6	8.4
R_424	390293	6958360	9.2	116.0	17.2	18.8	6.6	8.5
R_425	390294	6957252	10.4	81.2	17.2	18.2	6.6	8.2
R_426	390296	6958570	8.7	95.5	17.2	18.2	6.5	8.1
R_427	390299	6958670	8.5	79.2	17.2	18.0	6.5	8.0
R_428	390303	6958400	9.1	114.0	17.2	18.6	6.6	8.4
R_429	390320	6958440	9.0	112.6	17.2	18.5	6.5	8.3
R_430	390322	6957644	10.3	101.9	17.4	19.0	6.6	8.4
R_431	390324	6958123	10.4	118.1	17.3	19.9	6.6	9.3
R_432	390324	6958780	8.4	72.5	17.1	17.9	6.5	8.0
R_433	390325	6957696	10.7	108.2	17.5	19.4	6.7	8.6
R_434	390326	6958900	8.4	72.7	17.1	17.8	6.5	7.9
R_435	390337	6958480	8.8	101.8	17.2	18.4	6.5	8.2
R_436	390337	6958660	8.6	84.8	17.2	18.0	6.5	8.0
R_437	390340	6957770	11.8	133.4	17.7	20.3	6.7	9.2
R_438	390359	6958540	8.7	89.6	17.2	18.2	6.5	8.1
R_439	390361	6957647	10.4	100.4	17.4	19.1	6.6	8.4
R_440	390362	6957699	10.8	107.9	17.5	19.5	6.7	8.7
R_441	390367	6958910	8.4	71.9	17.1	17.8	6.5	7.9
R_442	390368	6958840	8.4	71.6	17.1	17.9	6.5	7.9
R_443	390372	6958770	8.5	79.8	17.1	17.9	6.5	8.0
R_444	390378	6958580	8.7	88.9	17.2	18.1	6.5	8.1
R_445	390392	6957146	10.8	86.2	17.2	18.3	6.6	8.4
R_446	390394	6958620	8.6	87.9	17.2	18.1	6.5	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_447 (within Project footprint)	390404	6957768	11.9	131.3	17.7	20.3	6.8	9.1
R_448	390407	6958910	8.4	70.7	17.1	17.8	6.5	7.9
R_449	390409	6958660	8.6	87.0	17.2	18.0	6.5	8.0
R_450	390435	6958730	8.5	85.8	17.1	17.9	6.5	8.0
R_451	390448	6958920	8.3	71.0	17.1	17.8	6.5	7.9
R_452	390452	6957041	11.0	94.2	17.2	18.5	6.6	8.5
R_453	390453	6958420	9.0	118.8	17.2	18.5	6.5	8.3
R_454	390453	6958420	9.0	118.8	17.2	18.5	6.5	8.3
R_455	390460	6958780	8.5	85.1	17.1	17.9	6.5	8.0
R_456	390475	6958810	8.4	84.7	17.1	17.9	6.5	7.9
R_457	390478	6957182	11.1	92.0	17.3	18.4	6.6	8.4
R_458	390480	6958850	8.4	84.0	17.1	17.8	6.5	7.9
R_459	390498	6958940	8.3	74.9	17.1	17.8	6.5	7.9
R_460	390519	6958890	8.4	83.8	17.1	17.8	6.5	7.9
R_461	390536	6958261	9.4	111.9	17.2	18.8	6.6	8.5
R_462	390542	6958420	9.0	118.2	17.2	18.4	6.5	8.2
R_463	390547	6958350	9.2	116.2	17.2	18.6	6.6	8.4
R_464	390565	6958256	9.3	109.3	17.2	18.8	6.6	8.5
R_465	390571	6958960	8.3	81.2	17.1	17.7	6.5	7.9
R_466	390576	6958420	9.0	117.2	17.2	18.3	6.5	8.2
R_467	390580	6958350	9.1	114.8	17.2	18.5	6.6	8.4
R_468	390580	6958350	9.1	114.8	17.2	18.5	6.6	8.4
R_469	390594	6958670	8.6	113.1	17.1	17.9	6.5	8.0
R_470	390601	6956460	14.4	132.8	17.3	20.0	6.7	10.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_471	390601	6958256	9.3	109.9	17.2	18.7	6.6	8.4
R_472	390608	6958410	9.0	115.8	17.2	18.3	6.5	8.2
R_473	390610	6958340	9.1	113.2	17.2	18.5	6.6	8.4
R_474	390614	6955660	9.6	101.0	17.2	18.0	6.6	8.2
R_475	390623	6955740	9.8	102.6	17.2	18.1	6.6	8.3
R_476	390625	6958252	9.3	110.1	17.2	18.7	6.6	8.4
R_477	390632	6955790	9.9	103.4	17.2	18.2	6.6	8.4
R_478	390639	6955840	10.1	108.2	17.2	18.3	6.6	8.4
R_479	390641	6958330	9.1	107.2	17.2	18.5	6.6	8.3
R_480	390647	6955890	10.4	124.9	17.2	18.4	6.6	8.5
R_481	390648	6958390	9.0	113.6	17.2	18.3	6.5	8.3
R_482	390648	6958390	9.0	113.6	17.2	18.3	6.5	8.3
R_483	390661	6955930	10.6	140.4	17.2	18.4	6.6	8.6
R_484	390668	6958250	9.2	110.0	17.2	18.6	6.6	8.3
R_485	390673	6958330	9.1	107.8	17.2	18.4	6.6	8.3
R_486	390680	6958410	8.9	112.9	17.2	18.3	6.5	8.2
R_487	390682	6955660	9.5	100.4	17.2	18.0	6.6	8.2
R_488	390688	6955610	9.4	99.1	17.2	17.9	6.6	8.1
R_489	390688	6958243	9.2	109.8	17.2	18.6	6.6	8.3
R_490	390704	6958320	9.0	108.4	17.2	18.4	6.6	8.3
R_491	390707	6958510	8.8	114.3	17.2	18.0	6.5	8.1
R_492	390710	6955990	10.8	143.8	17.2	18.6	6.6	8.8
R_493	390713	6958400	8.9	105.9	17.2	18.3	6.5	8.2
R_494	390717	6958460	8.8	112.9	17.2	18.1	6.5	8.2
R_495	390718	6958540	8.7	114.4	17.2	18.0	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_496	390722	6958570	8.7	114.5	17.2	18.0	6.5	8.0
R_497	390725	6955740	9.7	101.5	17.2	18.1	6.6	8.2
R_498	390727	6958600	8.6	114.5	17.2	17.9	6.5	8.0
R_499	390729	6958239	9.1	108.8	17.2	18.6	6.6	8.2
R_500	390731	6958630	8.6	114.3	17.1	17.9	6.5	8.0
R_501	390732	6955780	9.8	102.3	17.2	18.1	6.6	8.3
R_502	390735	6958660	8.6	114.1	17.1	17.9	6.5	8.0
R_503	390736	6958320	9.0	108.4	17.2	18.4	6.5	8.2
R_504	390739	6955830	10.0	110.7	17.2	18.2	6.6	8.3
R_505	390739	6958690	8.5	113.7	17.1	17.8	6.5	7.9
R_506	390744	6958730	8.5	113.2	17.1	17.8	6.5	7.9
R_507	390746	6955880	10.2	125.1	17.2	18.3	6.6	8.5
R_508	390747	6958400	8.9	105.4	17.2	18.2	6.5	8.2
R_509	390748	6958760	8.5	112.7	17.1	17.8	6.5	7.9
R_510	390753	6955590	9.4	87.1	17.2	17.9	6.6	8.1
R_511	390756	6958820	8.4	105.0	17.1	17.8	6.5	7.9
R_512	390758	6955930	10.5	141.2	17.2	18.4	6.6	8.6
R_513	390760	6958234	9.1	107.9	17.2	18.5	6.6	8.2
R_514	390760	6958850	8.4	99.5	17.1	17.8	6.5	7.9
R_515	390763	6958880	8.4	94.0	17.1	17.8	6.5	7.9
R_516	390766	6955980	10.7	143.2	17.2	18.6	6.6	8.8
R_517	390766	6958910	8.3	88.5	17.1	17.8	6.5	7.9
R_518	390767	6955660	9.5	98.2	17.2	18.0	6.6	8.1
R_519	390767	6958320	9.0	108.1	17.2	18.3	6.5	8.2
R_520	390770	6958940	8.3	83.5	17.1	17.8	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_521	390775	6958780	8.4	112.5	17.1	17.8	6.5	7.9
R_522	390775	6958780	8.4	112.5	17.1	17.8	6.5	7.9
R_523	390776	6958980	8.3	77.2	17.1	17.7	6.5	7.9
R_524	390779	6958460	8.8	105.0	17.2	18.1	6.5	8.2
R_525	390780	6958390	8.9	106.1	17.2	18.2	6.5	8.2
R_526	390788	6958229	9.1	107.1	17.2	18.5	6.6	8.2
R_527	390796	6958540	8.7	110.0	17.2	18.0	6.5	8.1
R_528	390801	6958310	9.0	107.9	17.2	18.3	6.5	8.1
R_529	390813	6955730	9.6	100.1	17.2	18.1	6.6	8.2
R_530	390817	6958390	8.9	106.4	17.2	18.2	6.5	8.2
R_531	390817	6958450	8.8	104.4	17.2	18.1	6.5	8.1
R_532	390818	6958680	8.5	113.0	17.1	17.8	6.5	7.9
R_533	390820	6955770	9.7	100.9	17.2	18.1	6.6	8.3
R_534	390823	6958250	9.0	106.8	17.2	18.4	6.6	8.1
R_535	390823	6958590	8.6	110.2	17.1	18.0	6.5	8.0
R_536	390826	6955820	9.9	110.2	17.2	18.2	6.6	8.4
R_537	390826	6958540	8.7	102.0	17.2	18.0	6.5	8.1
R_538	390828	6958770	8.4	112.5	17.1	17.8	6.5	7.9
R_539	390828	6959050	8.3	72.3	17.1	17.7	6.5	7.9
R_540	390830	6955640	9.4	86.4	17.2	17.9	6.6	8.1
R_541	390831	6958620	8.6	111.7	17.1	17.9	6.5	8.0
R_542	390833	6955860	10.1	120.9	17.2	18.3	6.6	8.5
R_543	390834	6955910	10.3	135.6	17.2	18.4	6.6	8.6
R_544	390839	6958320	8.9	107.4	17.2	18.2	6.5	8.1
R_545	390839	6958320	8.9	107.4	17.2	18.2	6.5	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_546	390842	6958370	8.9	106.9	17.2	18.2	6.5	8.1
R_547	390847	6958450	8.8	102.7	17.2	18.1	6.5	8.1
R_548	390853	6955480	9.2	76.7	17.2	17.8	6.5	8.0
R_549	390853	6958680	8.5	112.0	17.1	17.8	6.5	7.9
R_550	390856	6955941	10.5	142.0	17.2	18.5	6.6	8.7
R_551	390856	6958540	8.7	100.3	17.2	18.0	6.5	8.1
R_552	390857	6958820	8.4	107.3	17.1	17.8	6.5	7.9
R_553	390858	6955550	9.3	80.7	17.2	17.9	6.5	8.0
R_554	390858	6958770	8.4	111.0	17.1	17.8	6.5	7.9
R_555	390860	6958980	8.3	86.3	17.1	17.8	6.5	7.9
R_556	390863	6958850	8.4	104.0	17.1	17.8	6.5	7.9
R_557	390865	6958880	8.4	100.6	17.1	17.8	6.5	7.9
R_558	390865	6958950	8.3	91.2	17.1	17.8	6.5	7.9
R_559	390867	6958910	8.3	96.8	17.1	17.8	6.5	7.9
R_560	390873	6955640	9.4	81.4	17.2	17.9	6.6	8.1
R_561	390877	6958440	8.8	103.6	17.2	18.1	6.5	8.1
R_562	390878	6955980	10.7	143.2	17.2	18.6	6.6	8.8
R_563	390883	6958660	8.5	104.6	17.1	17.9	6.5	8.0
R_564	390884	6958330	8.9	106.8	17.2	18.2	6.5	8.1
R_565	390886	6958760	8.5	108.3	17.1	17.8	6.5	7.9
R_566	390887	6959080	8.3	73.9	17.1	17.7	6.5	7.9
R_567	390889	6958360	8.8	106.6	17.2	18.1	6.5	8.1
R_568	390892	6958265	9.0	105.7	17.2	18.3	6.5	8.1
R_569	390893	6958400	8.8	106.0	17.2	18.1	6.5	8.1
R_570	390894	6958292	8.9	106.2	17.2	18.2	6.5	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_571	390897	6958580	8.6	93.6	17.1	18.0	6.5	8.1
R_572	390904	6958510	8.7	95.7	17.2	18.0	6.5	8.1
R_573	390908	6958540	8.7	95.4	17.2	18.0	6.5	8.1
R_574	390909	6958990	8.3	88.1	17.1	17.8	6.5	7.9
R_575	390911	6958440	8.8	103.8	17.2	18.1	6.5	8.1
R_576	390913	6958660	8.5	98.2	17.1	17.9	6.5	8.0
R_577	390916	6955530	9.3	78.3	17.2	17.8	6.5	8.0
R_578	390918	6955720	9.6	90.1	17.2	18.0	6.6	8.2
R_579	390922	6955630	9.4	81.1	17.2	17.9	6.6	8.1
R_580	390923	6958750	8.5	102.8	17.1	17.8	6.5	7.9
R_581	390924	6955770	9.7	99.4	17.2	18.1	6.6	8.3
R_582	390927	6958610	8.6	89.0	17.1	17.9	6.5	8.0
R_583	390927	6958960	8.3	92.5	17.1	17.8	6.5	7.9
R_584	390932	6955810	9.8	108.2	17.2	18.2	6.6	8.4
R_585	390935	6955420	9.1	70.5	17.2	17.8	6.5	8.0
R_586	390938	6955860	10.0	121.2	17.2	18.3	6.6	8.5
R_587	390939	6958800	8.4	101.5	17.1	17.8	6.5	7.9
R_588	390945	6958850	8.4	100.2	17.1	17.8	6.5	7.9
R_589	390946	6958660	8.5	91.2	17.1	17.9	6.5	8.0
R_590	390947	6958880	8.4	98.9	17.1	17.8	6.5	7.9
R_591	390947	6958940	8.3	94.5	17.1	17.8	6.5	7.9
R_592	390947	6958283	8.9	102.5	17.2	18.2	6.5	8.1
R_593	390949	6958910	8.3	96.9	17.1	17.8	6.5	7.9
R_594	390950	6955910	10.3	135.5	17.2	18.4	6.6	8.6
R_595	390962	6958320	8.8	105.2	17.2	18.1	6.5	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_596	390962	6959130	8.2	73.5	17.1	17.7	6.5	7.9
R_597	390962	6959330	8.2	71.0	17.1	17.7	6.5	7.9
R_598	390962	6959540	8.1	70.5	17.1	17.7	6.5	7.8
R_599	390966	6955530	9.2	76.5	17.2	17.8	6.5	8.0
R_600	390967	6958360	8.8	105.5	17.2	18.1	6.5	8.1
R_601	390967	6959080	8.3	79.9	17.1	17.8	6.5	7.9
R_602	390971	6959060	8.3	82.4	17.1	17.8	6.5	7.9
R_603	390972	6958390	8.8	105.4	17.2	18.0	6.5	8.1
R_604	390973	6958740	8.5	93.8	17.1	17.8	6.5	8.0
R_605	390973	6957407	11.6	103.3	17.4	19.2	6.7	9.0
R_606	390976	6955630	9.4	80.9	17.2	17.9	6.6	8.1
R_607	390976	6958430	8.7	103.4	17.2	18.0	6.5	8.1
R_608	390981	6958460	8.7	98.7	17.2	18.0	6.5	8.1
R_609	390986	6958490	8.7	92.8	17.2	18.0	6.5	8.1
R_610	390987	6955978	10.6	142.9	17.2	18.6	6.6	8.8
R_611	390989	6955730	9.6	90.8	17.2	18.1	6.6	8.2
R_612	390989	6958660	8.5	82.2	17.1	17.9	6.5	8.0
R_613	390992	6958530	8.6	83.7	17.1	18.0	6.5	8.1
R_614	390995	6958610	8.6	84.1	17.1	17.9	6.5	8.0
R_615	390997	6959230	8.2	71.2	17.1	17.7	6.5	7.9
R_616	391002	6958570	8.6	83.7	17.1	17.9	6.5	8.0
R_617	391002	6958770	8.4	91.1	17.1	17.8	6.5	8.0
R_618	391005	6955410	9.1	69.9	17.2	17.8	6.5	8.0
R_619	391010	6955800	9.8	105.5	17.2	18.2	6.6	8.4
R_620	391015	6959130	8.2	76.5	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_621	391017	6958680	8.5	79.3	17.1	17.9	6.5	8.0
R_622	391020	6958360	8.8	100.0	17.2	18.1	6.5	8.1
R_623	391021	6955620	9.4	80.5	17.2	17.9	6.6	8.1
R_624	391024	6958420	8.7	100.8	17.2	18.0	6.5	8.0
R_625	391025	6955910	10.2	135.1	17.2	18.4	6.6	8.6
R_626	391025	6959010	8.3	87.8	17.1	17.8	6.5	7.9
R_627	391028	6955500	9.2	72.6	17.2	17.8	6.5	8.0
R_628	391029	6955850	10.0	117.9	17.2	18.3	6.6	8.4
R_629	391029	6958710	8.5	80.6	17.1	17.9	6.5	8.0
R_630	391029	6957310	13.1	109.1	17.4	19.4	6.7	9.2
R_631	391030	6958318	8.8	93.0	17.2	18.1	6.5	8.1
R_632	391033	6958460	8.7	96.9	17.2	18.0	6.5	8.0
R_633	391033	6958980	8.3	89.3	17.1	17.8	6.5	7.9
R_634	391035	6957316	13.1	109.1	17.4	19.4	6.7	9.2
R_635	391035	6958790	8.4	87.3	17.1	17.8	6.5	8.0
R_636	391037	6955550	9.3	75.2	17.2	17.8	6.5	8.0
R_637	391039	6958880	8.4	90.7	17.1	17.8	6.5	7.9
R_638	391040	6959240	8.2	71.2	17.1	17.7	6.5	7.9
R_639	391042	6958510	8.6	88.9	17.1	18.0	6.5	8.0
R_640	391042	6958910	8.3	90.6	17.1	17.8	6.5	7.9
R_641	391043	6958950	8.3	89.9	17.1	17.8	6.5	7.9
R_642	391047	6958550	8.6	80.7	17.1	17.9	6.5	8.0
R_643	391048	6958840	8.4	88.3	17.1	17.8	6.5	8.0
R_644	391049	6955964	10.5	142.4	17.2	18.5	6.6	8.7
R_645	391049	6959140	8.2	76.7	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_646	391055	6958580	8.6	76.5	17.1	17.9	6.5	8.0
R_647	391056	6958620	8.6	77.4	17.1	17.9	6.5	8.0
R_648	391058	6959440	8.2	70.7	17.1	17.7	6.5	7.8
R_649	391065	6959380	8.2	70.9	17.1	17.7	6.5	7.8
R_650	391069	6955400	9.1	69.4	17.2	17.8	6.5	7.9
R_651	391075	6958650	8.5	75.3	17.1	17.9	6.5	8.0
R_652	391076	6955610	9.4	77.4	17.2	17.9	6.6	8.1
R_653	391076	6959320	8.2	71.0	17.1	17.7	6.5	7.9
R_654	391079	6958390	8.8	94.1	17.2	18.1	6.5	8.1
R_655	391080	6959230	8.2	71.3	17.1	17.7	6.5	7.9
R_656	391081	6955690	9.5	83.6	17.2	18.0	6.6	8.2
R_657	391081	6959280	8.2	71.1	17.1	17.7	6.5	7.9
R_658	391082	6958329	8.8	86.6	17.2	18.1	6.5	8.1
R_659	391083	6957395	12.2	104.3	17.4	19.5	6.7	9.2
R_660	391084	6957433	11.6	101.4	17.4	19.4	6.7	9.0
R_661	391088	6955740	9.6	92.5	17.2	18.1	6.6	8.2
R_662	391096	6959690	8.1	70.2	17.1	17.6	6.5	7.8
R_663	391100	6959450	8.2	70.6	17.1	17.7	6.5	7.8
R_664	391102	6958460	8.7	91.7	17.2	18.0	6.5	8.1
R_665	391103	6959150	8.2	76.6	17.1	17.7	6.5	7.9
R_666	391105	6958710	8.5	74.3	17.1	17.9	6.5	8.0
R_667	391105	6958710	8.5	74.3	17.1	17.9	6.5	8.0
R_668	391110	6958510	8.6	86.9	17.1	18.0	6.5	8.1
R_669	391111	6955790	9.7	102.1	17.2	18.1	6.6	8.3
R_670	391113	6959240	8.2	71.4	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_671	391113	6959330	8.2	71.0	17.1	17.7	6.5	7.9
R_672	391116	6959370	8.2	70.8	17.1	17.7	6.5	7.8
R_673	391116	6958550	8.6	81.1	17.1	18.0	6.5	8.1
R_674	391117	6958400	8.7	89.5	17.2	18.1	6.5	8.1
R_675	391118	6955840	9.9	113.5	17.2	18.2	6.6	8.4
R_676	391120	6959550	8.1	70.4	17.1	17.7	6.5	7.8
R_677	391121	6958369	8.8	86.2	17.2	18.1	6.5	8.2
R_678	391122	6955951	10.4	141.8	17.2	18.4	6.6	8.6
R_679	391125	6955890	10.1	126.2	17.2	18.3	6.6	8.5
R_680	391129	6958590	8.6	75.3	17.1	18.0	6.5	8.0
R_681	391130	6958670	8.5	74.9	17.1	17.9	6.5	8.0
R_682	391133	6959440	8.2	70.6	17.1	17.7	6.5	7.8
R_683	391135	6958630	8.5	75.2	17.1	17.9	6.5	8.0
R_684	391136	6959160	8.2	75.8	17.1	17.7	6.5	7.9
R_685	391145	6955310	9.1	68.8	17.2	17.7	6.5	7.9
R_686	391147	6955720	9.6	88.2	17.2	18.0	6.6	8.2
R_687	391153	6958480	8.7	86.6	17.2	18.1	6.5	8.1
R_688	391155	6955400	9.2	69.1	17.2	17.8	6.5	7.9
R_689	391160	6958420	8.7	85.3	17.2	18.1	6.5	8.2
R_690	391160	6958520	8.6	83.7	17.1	18.0	6.5	8.1
R_691	391161	6959360	8.2	70.9	17.1	17.7	6.5	7.9
R_692	391161	6955580	9.3	73.1	17.2	17.9	6.6	8.1
R_693	391162	6955620	9.4	74.5	17.2	17.9	6.6	8.1
R_694	391163	6959170	8.2	74.8	17.1	17.7	6.5	7.9
R_695	391164	6958380	8.8	81.4	17.2	18.2	6.5	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_696	391165	6959240	8.2	71.6	17.1	17.7	6.5	7.9
R_697	391168	6957859	9.8	105.3	17.4	19.6	6.6	8.7
R_698	391168	6959280	8.2	71.4	17.1	17.7	6.5	7.9
R_699	391168	6958880	8.4	74.4	17.1	17.8	6.5	8.0
R_700	391168	6958880	8.4	74.4	17.1	17.8	6.5	8.0
R_701	391171	6955450	9.2	69.4	17.2	17.8	6.5	8.0
R_702	391173	6955490	9.2	72.0	17.2	17.8	6.5	8.0
R_703	391173	6958560	8.6	79.1	17.1	18.0	6.5	8.1
R_704	391176	6959290	8.2	71.3	17.1	17.7	6.5	7.9
R_705	391178	6955280	9.1	68.6	17.2	17.7	6.5	7.9
R_706	391180	6958660	8.5	75.9	17.1	17.9	6.5	8.0
R_707	391180	6958660	8.5	75.9	17.1	17.9	6.5	8.0
R_708	391180	6958800	8.4	74.8	17.1	17.9	6.5	8.0
R_709	391181	6958760	8.4	75.1	17.1	17.9	6.5	8.0
R_710	391182	6955530	9.3	72.4	17.2	17.8	6.5	8.0
R_711	391183	6958620	8.5	76.2	17.1	17.9	6.5	8.0
R_712	391187	6959180	8.2	73.5	17.1	17.7	6.5	7.9
R_713	391189	6959440	8.2	70.5	17.1	17.7	6.5	7.8
R_714	391193	6958700	8.5	75.7	17.1	17.9	6.5	8.0
R_715	391197	6955730	9.6	89.2	17.2	18.0	6.6	8.2
R_716	391202	6959370	8.2	70.8	17.1	17.7	6.5	7.8
R_717	391202	6958367	8.8	78.5	17.2	18.2	6.5	8.2
R_718	391205	6958430	8.7	80.8	17.2	18.1	6.5	8.2
R_719	391207	6958570	8.6	77.3	17.1	18.0	6.5	8.1
R_720	391207	6955940	10.2	130.9	17.2	18.3	6.6	8.5

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_721	391208	6955860	9.9	115.3	17.2	18.2	6.6	8.4
R_722	391211	6958740	8.5	75.6	17.1	17.9	6.5	8.0
R_723	391211	6958830	8.4	74.8	17.1	17.8	6.5	8.0
R_724	391213	6959180	8.2	72.6	17.1	17.7	6.5	7.9
R_725	391215	6955780	9.7	98.1	17.2	18.1	6.6	8.3
R_726	391216	6959290	8.2	71.3	17.1	17.7	6.5	7.9
R_727	391221	6958470	8.7	81.0	17.2	18.1	6.5	8.2
R_728	391223	6958620	8.5	76.8	17.1	17.9	6.5	8.0
R_729	391230	6955560	9.3	72.6	17.2	17.8	6.6	8.0
R_730	391232	6958510	8.6	80.1	17.1	18.0	6.5	8.1
R_731	391236	6958960	8.3	73.8	17.1	17.8	6.5	7.9
R_732	391239	6959190	8.2	72.0	17.1	17.7	6.5	7.9
R_733	391240	6956416	13.6	118.6	17.3	19.2	6.7	9.3
R_734	391242	6959420	8.2	70.4	17.1	17.7	6.5	7.8
R_735	391242	6958390	8.7	79.6	17.2	18.2	6.5	8.2
R_736	391243	6958690	8.5	76.3	17.1	17.9	6.5	8.0
R_737	391245	6958880	8.4	74.5	17.1	17.8	6.5	8.0
R_738	391246	6959360	8.2	70.8	17.1	17.7	6.5	7.8
R_739	391246	6955630	9.4	76.8	17.2	17.9	6.6	8.1
R_740	391246	6959290	8.2	71.3	17.1	17.7	6.5	7.9
R_741	391248	6958810	8.4	75.1	17.1	17.8	6.5	8.0
R_742	391250	6958740	8.5	75.8	17.1	17.9	6.5	8.0
R_743	391251	6955730	9.6	88.5	17.2	18.0	6.6	8.2
R_744	391253	6958600	8.6	77.3	17.1	18.0	6.5	8.1
R_745	391254	6955350	9.2	68.8	17.2	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_746	391258	6958460	8.7	78.7	17.2	18.1	6.5	8.2
R_747	391260	6959600	8.1	70.2	17.1	17.6	6.5	7.8
R_748	391262	6959000	8.3	73.4	17.1	17.8	6.5	7.9
R_749	391265	6959190	8.2	71.9	17.1	17.7	6.5	7.9
R_750	391268	6955260	9.1	68.5	17.2	17.7	6.5	7.9
R_751	391268	6955260	9.1	68.5	17.2	17.7	6.5	7.9
R_752	391269	6958520	8.6	78.2	17.1	18.0	6.5	8.1
R_753	391269	6959030	8.3	73.2	17.1	17.8	6.5	7.9
R_754	391274	6958398	8.7	82.0	17.2	18.2	6.5	8.2
R_755	391275	6959290	8.2	71.2	17.1	17.7	6.5	7.9
R_756	391278	6958850	8.4	74.8	17.1	17.8	6.5	8.0
R_757	391282	6959400	8.2	70.4	17.1	17.7	6.5	7.8
R_758	391283	6958670	8.5	76.6	17.1	17.9	6.5	8.0
R_759	391283	6958800	8.4	75.3	17.1	17.8	6.5	8.0
R_760	391284	6958970	8.3	73.7	17.1	17.8	6.5	7.9
R_761	391291	6958720	8.5	76.1	17.1	17.9	6.5	8.0
R_762	391291	6958720	8.5	76.1	17.1	17.9	6.5	8.0
R_763	391291	6959190	8.2	71.8	17.1	17.7	6.5	7.9
R_764	391292	6958890	8.4	74.4	17.1	17.8	6.5	7.9
R_765	391293	6958940	8.3	73.9	17.1	17.8	6.5	7.9
R_766	391294	6958460	8.7	84.8	17.2	18.1	6.5	8.2
R_767	391296	6955410	9.2	68.9	17.2	17.7	6.5	7.9
R_768	391297	6955780	9.7	95.8	17.2	18.0	6.6	8.2
R_769	391300	6955610	9.4	78.0	17.2	17.9	6.6	8.1
R_770	391302	6955860	9.9	107.0	17.2	18.1	6.6	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_771	391302	6955924	10.1	112.9	17.2	18.2	6.6	8.4
R_772	391303	6955460	9.3	69.2	17.2	17.8	6.5	8.0
R_773	391304	6959280	8.2	71.1	17.1	17.7	6.5	7.9
R_774	391305	6959350	8.2	70.6	17.1	17.7	6.5	7.8
R_775	391308	6955720	9.6	86.5	17.2	18.0	6.6	8.2
R_776	391310	6955510	9.3	72.2	17.2	17.8	6.5	8.0
R_777	391314	6958408	8.7	90.3	17.2	18.2	6.5	8.2
R_778	391318	6955560	9.4	75.6	17.2	17.8	6.6	8.0
R_779	391318	6959190	8.2	71.7	17.1	17.7	6.5	7.9
R_780	391322	6958620	8.6	79.5	17.1	17.9	6.5	8.0
R_781	391326	6958550	8.6	86.6	17.1	18.0	6.5	8.1
R_782	391329	6958580	8.6	84.5	17.1	18.0	6.5	8.1
R_783	391332	6958490	8.7	90.2	17.2	18.1	6.5	8.1
R_784	391342	6958650	8.5	80.4	17.1	17.9	6.5	8.0
R_785	391344	6959040	8.3	72.7	17.1	17.8	6.5	7.9
R_786	391346	6959210	8.2	71.4	17.1	17.7	6.5	7.9
R_787	391350	6958690	8.5	78.3	17.1	17.9	6.5	8.0
R_788	391353	6958790	8.4	75.0	17.1	17.8	6.5	8.0
R_789	391354	6955620	9.4	79.1	17.2	17.9	6.6	8.0
R_790	391354	6958730	8.5	76.0	17.1	17.9	6.5	8.0
R_791	391354	6958760	8.5	75.3	17.1	17.8	6.5	8.0
R_792	391360	6958820	8.4	74.6	17.1	17.8	6.5	8.0
R_793	391360	6958820	8.4	74.6	17.1	17.8	6.5	8.0
R_794	391365	6955710	9.6	84.3	17.2	17.9	6.6	8.1
R_795	391368	6959020	8.3	72.7	17.1	17.8	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_796	391372	6958880	8.4	73.9	17.1	17.8	6.5	7.9
R_797	391374	6955770	9.7	90.7	17.2	18.0	6.6	8.2
R_798	391374	6958970	8.4	73.1	17.1	17.8	6.5	7.9
R_799	391378	6958940	8.4	73.3	17.1	17.8	6.5	7.9
R_800	391379	6955840	9.9	98.1	17.2	18.1	6.6	8.2
R_801	391380	6958910	8.4	73.5	17.1	17.8	6.5	7.9
R_802	391385	6955911	10.0	98.3	17.2	18.1	6.6	8.3
R_803	391386	6957789	9.7	92.1	17.3	19.5	6.6	8.7
R_804	391387	6958510	8.7	90.8	17.2	18.0	6.5	8.1
R_805	391387	6958510	8.7	90.8	17.2	18.0	6.5	8.1
R_806	391388	6959230	8.2	70.9	17.1	17.7	6.5	7.9
R_807	391397	6959260	8.2	70.6	17.1	17.7	6.5	7.8
R_808	391404	6959010	8.3	72.4	17.1	17.8	6.5	7.9
R_809	391404	6959010	8.3	72.4	17.1	17.8	6.5	7.9
R_810	391413	6959270	8.2	70.4	17.1	17.7	6.5	7.8
R_811	391429	6955610	9.5	79.4	17.2	17.9	6.6	8.0
R_812	391434	6955730	9.6	82.3	17.2	18.0	6.6	8.1
R_813	391435	6955670	9.5	79.8	17.2	17.9	6.6	8.1
R_814	391435	6955700	9.6	80.1	17.2	17.9	6.6	8.1
R_815	391435	6959390	8.2	69.9	17.1	17.7	6.5	7.8
R_816	391442	6955760	9.7	82.6	17.2	18.0	6.6	8.1
R_817	391445	6955790	9.7	83.3	17.2	18.0	6.6	8.2
R_818	391446	6955810	9.8	83.5	17.2	18.0	6.6	8.2
R_819	391450	6955240	9.2	69.5	17.2	17.7	6.5	7.9
R_820	391482	6955810	9.7	81.2	17.2	18.0	6.6	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_821	391486	6957207	15.0	141.9	17.5	23.1	6.8	12.7
R_822	391488	6955760	9.7	80.7	17.2	18.0	6.6	8.2
R_823	391488	6955730	9.6	80.5	17.2	18.0	6.6	8.1
R_824	391489	6955889	9.9	89.2	17.2	18.1	6.6	8.2
R_825	391493	6955951	10.0	91.0	17.2	18.1	6.6	8.3
R_826	391500	6955810	9.7	81.1	17.2	18.0	6.6	8.2
R_827	391501	6955690	9.6	80.2	17.2	17.9	6.6	8.1
R_828	391503	6956011	10.1	91.9	17.2	18.2	6.6	8.3
R_829	391505	6955750	9.7	80.7	17.2	18.0	6.6	8.2
R_830	391508	6955620	9.5	79.7	17.2	17.9	6.6	8.1
R_831	391510	6955540	9.4	79.3	17.2	17.9	6.6	8.0
R_832	391511	6959220	8.3	70.1	17.1	17.7	6.5	7.8
R_833	391511	6956075	10.3	92.6	17.2	18.3	6.6	8.4
R_834	391514	6956131	10.4	92.5	17.2	18.3	6.6	8.5
R_835	391515	6955730	9.6	80.6	17.2	18.0	6.6	8.1
R_836	391523	6955800	9.7	81.1	17.2	18.0	6.6	8.2
R_837	391526	6955750	9.7	80.7	17.2	18.0	6.6	8.2
R_838	391527	6956205	10.5	91.3	17.2	18.4	6.6	8.5
R_839	391536	6955540	9.4	79.4	17.2	17.9	6.6	8.0
R_840	391541	6955600	9.5	79.7	17.2	17.9	6.6	8.1
R_841	391546	6955640	9.5	80.0	17.2	17.9	6.6	8.1
R_842	391547	6955800	9.7	81.2	17.2	18.0	6.6	8.2
R_843	391555	6955550	9.4	79.5	17.2	17.9	6.6	8.1
R_844	391563	6955710	9.6	80.5	17.2	18.0	6.6	8.1
R_845	391563	6955610	9.5	79.8	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_846	391565	6955690	9.6	80.4	17.2	18.0	6.6	8.1
R_847	391566	6955720	9.6	80.6	17.2	18.0	6.6	8.2
R_848	391567	6955790	9.7	81.2	17.2	18.0	6.6	8.2
R_849	391569	6955640	9.5	80.0	17.2	17.9	6.6	8.1
R_850	391571	6955750	9.7	80.9	17.2	18.0	6.6	8.2
R_851	391574	6955865	9.8	88.4	17.2	18.1	6.6	8.2
R_852	391580	6955540	9.5	79.5	17.2	17.9	6.6	8.1
R_853	391582	6955925	9.9	90.2	17.2	18.1	6.6	8.3
R_854	391584	6955600	9.5	79.8	17.2	17.9	6.6	8.1
R_855	391588	6955640	9.5	80.1	17.2	17.9	6.6	8.1
R_856	391588	6955983	10.0	91.1	17.2	18.1	6.6	8.3
R_857	391590	6955690	9.6	80.4	17.2	18.0	6.6	8.1
R_858	391594	6955790	9.7	81.2	17.2	18.0	6.6	8.2
R_859	391596	6956044	10.1	91.7	17.2	18.2	6.6	8.3
R_860	391597	6955730	9.6	80.7	17.2	18.0	6.6	8.2
R_861	391601	6955550	9.5	79.6	17.2	17.9	6.6	8.1
R_862	391603	6956095	10.2	91.7	17.2	18.2	6.6	8.4
R_863	391607	6955690	9.6	80.4	17.2	18.0	6.6	8.1
R_864	391607	6955600	9.5	79.8	17.2	17.9	6.6	8.1
R_865	391611	6955620	9.5	80.0	17.2	17.9	6.6	8.1
R_866	391612	6955790	9.7	81.2	17.2	18.0	6.6	8.2
R_867	391615	6955640	9.5	80.1	17.2	18.0	6.6	8.1
R_868	391615	6956195	10.4	90.6	17.2	18.3	6.6	8.5
R_869	391616	6955720	9.6	80.6	17.2	18.0	6.6	8.2
R_870	391617	6955810	9.7	81.4	17.2	18.0	6.6	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_871	391619	6955540	9.5	79.6	17.2	17.9	6.6	8.1
R_872	391621	6955860	9.8	88.1	17.2	18.1	6.6	8.2
R_873	391626	6955880	9.8	88.5	17.2	18.1	6.6	8.2
R_874	391627	6955780	9.7	81.1	17.2	18.0	6.6	8.2
R_875	391628	6955900	9.9	88.8	17.2	18.1	6.6	8.3
R_876	391628	6955690	9.6	80.4	17.2	18.0	6.6	8.2
R_877	391631	6955920	9.9	89.4	17.2	18.1	6.6	8.3
R_878	391634	6955940	9.9	90.2	17.2	18.1	6.6	8.3
R_879	391635	6955710	9.6	80.5	17.2	18.0	6.6	8.2
R_880	391636	6955960	9.9	90.5	17.2	18.1	6.6	8.3
R_881	391637	6955800	9.7	81.2	17.2	18.0	6.6	8.2
R_882	391639	6955980	10.0	90.7	17.2	18.1	6.6	8.3
R_883	391641	6955540	9.5	79.6	17.2	17.9	6.6	8.1
R_884	391643	6956031	10.1	91.1	17.2	18.2	6.6	8.3
R_885	391645	6955720	9.6	80.6	17.2	18.0	6.6	8.2
R_886	391647	6955770	9.7	81.0	17.2	18.0	6.6	8.2
R_887	391654	6955600	9.5	79.8	17.2	17.9	6.6	8.1
R_888 (within Project footprint)	391657	6957617	10.9	157.9	17.3	21.8	6.6	11.1
R_889	391657	6955800	9.7	81.2	17.2	18.0	6.6	8.2
R_890	391659	6955620	9.5	79.9	17.2	18.0	6.6	8.1
R_891	391663	6956380	10.8	106.1	17.2	18.8	6.6	8.9
R_892	391664	6955760	9.7	80.8	17.2	18.0	6.6	8.2
R_893	391667	6955640	9.5	80.0	17.2	18.0	6.6	8.1
R_894	391670	6955660	9.5	80.1	17.2	18.0	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_895	391671	6956020	10.0	90.8	17.2	18.2	6.6	8.3
R_896	391675	6955790	9.7	81.0	17.2	18.0	6.6	8.2
R_897	391675	6956064	10.1	90.9	17.2	18.2	6.6	8.4
R_898 (within Project footprint)	391679	6957321	53.9	286.6	21.5	49.2	10.1	37.3
R_899	391679	6955680	9.6	80.2	17.2	18.0	6.6	8.2
R_900	391680	6959140	8.3	69.4	17.1	17.7	6.5	7.9
R_901	391683	6956181	10.3	90.2	17.2	18.4	6.6	8.5
R_902	391686	6955700	9.6	80.3	17.2	18.0	6.6	8.2
R_903	391689	6956010	10.0	90.6	17.2	18.2	6.6	8.3
R_904	391692	6955890	9.8	88.4	17.2	18.1	6.6	8.3
R_905	391697	6955710	9.6	80.4	17.2	18.0	6.6	8.2
R_906	391706	6955730	9.6	80.5	17.2	18.0	6.6	8.2
R_907	391707	6956000	9.9	90.4	17.2	18.2	6.6	8.3
R_908	391719	6955750	9.6	80.6	17.2	18.0	6.6	8.2
R_909	391722	6955990	9.9	90.3	17.2	18.2	6.6	8.3
R_910	391723	6955780	9.6	80.7	17.2	18.0	6.6	8.2
R_911	391726	6955800	9.7	80.8	17.2	18.1	6.6	8.2
R_912	391732	6955820	9.7	81.0	17.2	18.1	6.6	8.2
R_913	391733	6955840	9.7	83.1	17.2	18.1	6.6	8.2
R_914	391737	6956170	10.2	89.9	17.2	18.4	6.6	8.5
R_915	391737	6956170	10.2	89.9	17.2	18.4	6.6	8.5
R_916	391744	6955980	9.9	90.1	17.2	18.2	6.6	8.3
R_917	391760	6955970	9.9	90.0	17.2	18.2	6.6	8.3
R_918	391767	6955860	9.7	85.3	17.2	18.1	6.6	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_919	391767	6956036	10.0	90.3	17.2	18.2	6.6	8.4
R_920	391781	6955960	9.8	88.9	17.2	18.2	6.6	8.3
R_921	391786	6955880	9.7	87.4	17.2	18.1	6.6	8.3
R_922	391809	6955890	9.7	87.6	17.2	18.1	6.6	8.3
R_923 (within Project footprint)	391812	6957427	12.9	168.7	17.4	21.1	6.7	10.3
R_924	391831	6955880	9.7	85.3	17.2	18.1	6.6	8.3
R_925	391834	6958511	8.7	82.0	17.2	18.2	6.5	8.2
R_926	391839	6955930	9.8	88.2	17.2	18.1	6.6	8.3
R_927	391843	6957786	9.6	113.0	17.2	19.0	6.6	8.8
R_928	391844	6955950	9.8	88.3	17.2	18.1	6.6	8.3
R_929	391965	6958191	8.9	100.6	17.2	18.5	6.5	8.4
R_930	392011	6959000	8.4	70.3	17.1	17.8	6.5	7.9
R_931 (within Project footprint)	392024	6957703	9.7	121.1	17.2	18.6	6.6	8.6
R_932	392032	6958290	8.8	93.5	17.2	18.3	6.5	8.3
R_933	392040	6956304	10.3	112.8	17.2	18.5	6.6	8.6
R_934	392055	6956010	9.8	86.1	17.2	18.1	6.6	8.3
R_935	392088	6956299	10.2	116.9	17.2	18.5	6.6	8.6
R_936	392097	6956251	10.1	109.5	17.2	18.4	6.6	8.6
R_937	392110	6955780	9.5	74.6	17.2	17.9	6.6	8.1
R_938	392112	6957792	9.4	117.4	17.2	18.4	6.6	8.4
R_939	392125	6959220	8.3	70.1	17.1	17.7	6.5	7.9
R_940	392147	6959360	8.3	69.8	17.1	17.7	6.5	7.8
R_941	392160	6956244	10.1	111.1	17.2	18.4	6.6	8.5
R_942	392161	6958921	8.4	71.3	17.1	17.8	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_943	392162	6958240	8.9	110.8	17.2	18.3	6.5	8.3
R_944	392163	6959450	8.3	69.6	17.1	17.7	6.5	7.8
R_945	392171	6956297	10.2	123.3	17.2	18.5	6.6	8.6
R_946	392179	6959640	8.2	68.7	17.1	17.6	6.5	7.8
R_947	392219	6958233	8.9	114.2	17.2	18.2	6.5	8.3
R_948	392247	6955679	9.4	74.7	17.2	17.9	6.6	8.0
R_949	392258	6955770	9.5	77.7	17.2	17.9	6.6	8.1
R_950	392279	6955796	9.5	79.9	17.2	17.9	6.6	8.1
R_951	392285	6955330	9.3	71.9	17.2	17.8	6.6	7.9
R_952	392302	6955672	9.4	75.6	17.2	17.9	6.6	8.0
R_953	392331	6956640	11.0	147.4	17.2	18.9	6.6	9.0
R_954	392358	6955740	9.5	78.2	17.2	17.9	6.6	8.1
R_955	392360	6955556	9.4	72.3	17.2	17.8	6.6	8.0
R_956	392362	6955671	9.4	76.1	17.2	17.9	6.6	8.0
R_957	392377	6955245	9.3	71.9	17.2	17.8	6.5	7.9
R_958	392380	6956756	11.9	149.1	17.3	19.0	6.6	9.1
R_959	392385	6956246	10.1	122.3	17.2	18.3	6.6	8.4
R_960	392397	6955170	9.3	71.8	17.2	17.8	6.5	7.9
R_961	392400	6956688	11.2	147.3	17.2	18.8	6.6	8.9
R_962	392405	6955661	9.4	76.3	17.2	17.9	6.6	8.0
R_963	392410	6955320	9.4	72.0	17.2	17.8	6.6	8.0
R_964	392417	6955745	9.5	80.1	17.2	17.9	6.6	8.1
R_965	392419	6955414	9.4	72.0	17.2	17.8	6.6	8.0
R_966	392435	6955555	9.4	71.9	17.2	17.8	6.6	8.0
R_967	392452	6956060	9.8	101.5	17.2	18.1	6.6	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_968	392456	6955621	9.4	75.4	17.2	17.8	6.6	8.0
R_969	392479	6955310	9.4	72.1	17.2	17.8	6.6	8.0
R_970	392482	6955733	9.5	80.6	17.2	17.9	6.6	8.1
R_971	392492	6957380	10.0	114.9	17.2	18.4	6.6	8.6
R_972	392504	6955180	9.4	71.7	17.2	17.8	6.6	7.9
R_973	392514	6955241	9.4	72.1	17.2	17.8	6.6	7.9
R_974	392524	6955547	9.5	72.4	17.2	17.9	6.6	8.0
R_975	392536	6956591	10.9	145.8	17.2	18.5	6.6	8.7
R_976	392557	6959560	8.3	70.1	17.1	17.7	6.5	7.8
R_977	392557	6959560	8.3	70.1	17.1	17.7	6.5	7.8
R_978	392557	6956196	10.1	119.2	17.2	18.2	6.6	8.3
R_979	392578	6955266	9.4	74.0	17.2	17.8	6.6	8.0
R_980	392581	6955410	9.5	74.9	17.2	17.9	6.6	8.0
R_981	392586	6955685	9.5	80.6	17.2	17.9	6.6	8.0
R_982	392623	6955319	9.5	76.2	17.2	17.8	6.6	8.0
R_983	392633	6956010	9.9	108.2	17.2	18.0	6.6	8.2
R_984	392642	6955388	9.5	76.9	17.2	17.9	6.6	8.0
R_985	392643	6955242	9.5	74.9	17.2	17.8	6.6	8.0
R_986	392653	6958718	8.5	90.8	17.1	17.9	6.5	8.0
R_987	392661	6958730	8.5	90.0	17.1	17.9	6.5	8.0
R_988	392672	6955805	9.6	85.0	17.2	17.9	6.6	8.1
R_989	392689	6956509	11.1	143.7	17.2	18.5	6.6	8.6
R_990	392711	6955619	9.6	80.6	17.2	17.9	6.6	8.1
R_991	392712	6958940	8.4	76.1	17.1	17.8	6.5	7.9
R_992	392712	6958940	8.4	76.1	17.1	17.8	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_993	392736	6958706	8.5	88.5	17.1	17.9	6.5	8.0
R_994	392739	6956054	10.1	121.0	17.2	18.1	6.6	8.3
R_995	392755	6955456	9.6	79.7	17.2	17.9	6.6	8.1
R_996	392755	6955492	9.6	79.0	17.2	17.9	6.6	8.1
R_997	392756	6955345	9.6	79.6	17.2	17.9	6.6	8.0
R_998	392810	6955999	10.1	115.8	17.2	18.1	6.6	8.2
R_999	392822	6955664	9.7	81.5	17.2	17.9	6.6	8.1
R_1000	392887	6957880	9.0	87.7	17.2	17.9	6.5	8.1
R_1001	392899	6956300	11.2	140.5	17.2	18.4	6.6	8.6
R_1002	392899	6956300	11.2	140.5	17.2	18.4	6.6	8.6
R_1003	392924	6956042	10.4	121.8	17.2	18.2	6.6	8.3
R_1004	393026	6956020	10.6	118.1	17.2	18.2	6.6	8.4
R_1005	393065	6956005	10.6	116.1	17.2	18.2	6.6	8.4
R_1006	393113	6955689	9.9	90.8	17.2	18.1	6.6	8.3
R_1007	393207	6958891	8.5	67.5	17.1	17.8	6.5	7.9
R_1008	393213	6956291	12.2	121.6	17.3	19.1	6.7	9.3
R_1009	393231	6955994	10.9	109.6	17.2	18.4	6.6	8.6
R_1010	393291	6955932	10.7	102.8	17.2	18.3	6.6	8.5
R_1011	393336	6956231	12.3	113.9	17.3	19.2	6.7	9.4
R_1012	393372	6955996	11.2	103.7	17.2	18.6	6.6	8.8
R_1013	393401	6955890	10.8	101.4	17.2	18.4	6.6	8.6
R_1014	393493	6955408	10.1	93.6	17.2	18.1	6.6	8.2
R_1015	393519	6956124	12.4	102.2	17.3	19.3	6.7	9.5
R_1016	393535	6955510	10.4	101.5	17.2	18.2	6.6	8.4
R_1017	393539	6955350	10.1	87.9	17.2	18.0	6.6	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1018	393583	6955848	11.1	105.0	17.2	18.6	6.6	8.8
R_1019	393591	6955608	10.6	103.1	17.2	18.3	6.6	8.5
R_1020	393630	6955554	10.7	102.6	17.2	18.3	6.6	8.5
R_1021	393646	6955680	11.0	104.7	17.2	18.5	6.6	8.6
R_1022	393653	6955874	11.4	106.9	17.2	18.9	6.6	9.1
R_1023	393656	6955474	10.6	101.5	17.2	18.2	6.6	8.4
R_1024	393665	6955962	11.8	107.0	17.3	19.1	6.6	9.3
R_1025	393667	6955823	11.3	107.0	17.2	18.8	6.6	9.0
R_1026	393671	6955958	11.8	107.2	17.3	19.1	6.6	9.3
R_1027	393679	6955777	11.3	106.7	17.2	18.7	6.6	8.9
R_1028	393717	6957669	8.9	72.8	17.1	17.8	6.5	8.0
R_1029	393761	6955932	12.2	110.1	17.3	19.3	6.7	9.5
R_1030	393806	6955925	12.4	111.6	17.3	19.4	6.7	9.6
R_1031	393808	6956169	15.3	126.2	17.4	20.3	6.8	10.5
R_1032	393815	6957660	8.9	71.8	17.1	17.8	6.5	8.0
R_1033	393819	6955666	11.7	106.6	17.2	18.7	6.6	8.9
R_1034	393831	6955733	12.0	108.7	17.3	18.9	6.6	9.1
R_1035	393852	6955476	11.3	102.6	17.2	18.4	6.6	8.6
R_1036	393861	6955588	11.7	105.0	17.2	18.6	6.6	8.8
R_1037	393889	6956010	13.5	114.8	17.3	19.8	6.7	10.0
R_1038	393898	6955383	11.1	101.1	17.2	18.3	6.6	8.5
R_1039	394076	6955678	13.2	109.7	17.3	19.3	6.7	9.5
R_1040	394089	6955731	13.7	111.7	17.3	19.5	6.7	9.7
R_1041	394361	6957586	8.9	80.0	17.1	17.8	6.5	8.0
R_1042	394425	6956994	9.4	82.1	17.2	18.0	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1043	394499	6957645	8.9	79.9	17.1	17.8	6.5	8.0
R_1044	394506	6955950	13.3	150.4	17.3	20.3	6.7	10.5
R_1045	394681	6955211	10.8	89.9	17.2	18.7	6.6	8.9
R_1046	394693	6955287	11.6	101.3	17.2	19.0	6.6	9.2
R_1047	394700	6954918	9.5	81.2	17.2	18.1	6.6	8.3
R_1048	394700	6955143	10.4	87.1	17.2	18.5	6.6	8.7
R_1049	394724	6955892	12.4	143.7	17.3	19.7	6.7	9.9
R_1050	394747	6955168	10.5	87.8	17.2	18.6	6.6	8.8
R_1051	394762	6954918	9.5	80.8	17.2	18.1	6.6	8.3
R_1052	394776	6956056	10.8	100.4	17.2	18.8	6.6	9.0
R_1053	394799	6955126	10.3	85.4	17.2	18.6	6.6	8.7
R_1054	394848	6954938	9.6	80.2	17.2	18.2	6.6	8.3
R_1055	394858	6955014	9.8	81.5	17.2	18.3	6.6	8.5
R_1056	394864	6955069	10.1	82.6	17.2	18.4	6.6	8.6
R_1057	394876	6955245	11.3	100.0	17.2	19.0	6.6	9.2
R_1058	394884	6956894	9.6	87.5	17.2	18.0	6.6	8.2
R_1059	394895	6954918	9.5	79.4	17.2	18.1	6.6	8.3
R_1060	394907	6957350	9.2	80.0	17.2	17.9	6.5	8.1
R_1061	394908	6955151	10.6	89.1	17.2	18.7	6.6	8.9
R_1062	394919	6956882	9.6	86.9	17.2	18.0	6.6	8.2
R_1063	394920	6955068	10.1	82.7	17.2	18.5	6.6	8.7
R_1064	394941	6955006	9.8	80.0	17.2	18.3	6.6	8.5
R_1065	394960	6954917	9.6	77.7	17.2	18.2	6.6	8.3
R_1066	394961	6956725	9.8	82.4	17.2	18.0	6.6	8.2
R_1067	394985	6955068	10.2	86.2	17.2	18.5	6.6	8.7

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1068	394988	6955211	11.2	99.5	17.2	19.0	6.6	9.2
R_1069	394999	6954913	9.6	74.2	17.2	18.2	6.6	8.3
R_1070	395046	6955069	10.2	89.0	17.2	18.6	6.6	8.7
R_1071	395062	6954917	9.6	76.5	17.2	18.2	6.6	8.4
R_1072	395071	6955033	10.1	87.4	17.2	18.5	6.6	8.6
R_1073	395083	6954962	9.8	81.0	17.2	18.3	6.6	8.5
R_1074	395416	6957667	8.9	68.5	17.1	17.7	6.5	7.9
R_1075	395431	6955417	16.8	161.1	17.5	20.6	6.8	10.8
R_1076	395669	6957282	9.2	70.3	17.2	17.8	6.5	8.0
R_1077	395723	6957463	9.0	70.9	17.1	17.8	6.5	7.9
R_1078	395732	6957074	9.4	77.2	17.2	17.9	6.6	8.1
R_1079	395752	6957247	9.2	70.4	17.2	17.8	6.5	8.0
R_1080	395754	6954966	10.1	114.0	17.2	18.5	6.6	8.6
R_1081	395785	6957439	9.0	72.4	17.1	17.8	6.5	7.9
R_1082	396219	6955950	12.5	98.3	17.3	19.3	6.7	9.5
R_1083	396236	6955950	12.6	98.8	17.3	19.4	6.7	9.6
R_1084	396249	6955990	12.3	97.8	17.3	19.2	6.7	9.4
R_1085	396257	6955940	12.7	99.3	17.3	19.4	6.7	9.6
R_1086	396258	6956120	11.6	95.3	17.2	18.8	6.6	9.0
R_1087	396265	6956090	11.7	95.9	17.2	18.9	6.6	9.1
R_1088	396273	6956070	11.8	96.3	17.3	19.0	6.6	9.2
R_1089	396274	6955980	12.4	98.3	17.3	19.3	6.7	9.5
R_1090	396274	6956060	11.9	96.5	17.3	19.0	6.6	9.2
R_1091	396276	6956010	12.2	97.5	17.3	19.2	6.6	9.4
R_1092	396276	6955940	12.7	99.6	17.3	19.4	6.7	9.6

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1093	396277	6956020	12.1	97.3	17.3	19.1	6.6	9.3
R_1094	396280	6956050	11.9	96.7	17.3	19.0	6.6	9.2
R_1095	396296	6955940	12.8	99.8	17.3	19.4	6.7	9.6
R_1096	396301	6956140	11.5	95.2	17.2	18.8	6.6	9.0
R_1097	396309	6956150	11.5	95.1	17.2	18.8	6.6	9.0
R_1098	396310	6956100	11.7	95.9	17.2	18.9	6.6	9.1
R_1099	396318	6955930	13.0	100.5	17.3	19.5	6.7	9.7
R_1100	396318	6956080	11.8	96.4	17.3	19.0	6.6	9.2
R_1101	396321	6955970	12.6	99.1	17.3	19.4	6.7	9.5
R_1102	396322	6956000	12.3	98.2	17.3	19.2	6.7	9.4
R_1103	396322	6956000	12.3	98.2	17.3	19.2	6.7	9.4
R_1104	396327	6956060	11.9	96.9	17.3	19.1	6.6	9.2
R_1105	396330	6956030	12.1	97.5	17.3	19.2	6.6	9.3
R_1106	396331	6956150	11.6	95.3	17.2	18.8	6.6	9.0
R_1107	396337	6956110	11.7	96.0	17.2	18.9	6.6	9.1
R_1108	396338	6956200	11.4	94.6	17.2	18.7	6.6	8.9
R_1109	396342	6955930	13.0	101.0	17.3	19.5	6.7	9.7
R_1110	396344	6956173	11.5	95.0	17.2	18.8	6.6	9.0
R_1111	396345	6956090	11.8	96.4	17.3	19.0	6.6	9.2
R_1112	396347	6955970	12.7	99.5	17.3	19.4	6.7	9.6
R_1113	396351	6956070	11.9	96.9	17.3	19.1	6.6	9.2
R_1114	396354	6955990	12.5	98.9	17.3	19.3	6.7	9.5
R_1115	396356	6956020	12.3	98.1	17.3	19.2	6.7	9.4
R_1116	396360	6956050	12.1	97.4	17.3	19.1	6.6	9.3
R_1117	396383	6956142	11.7	95.9	17.2	18.9	6.6	9.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1118	396385	6956192	11.5	95.1	17.2	18.8	6.6	9.0
R_1119	396392	6956125	11.7	96.3	17.2	19.0	6.6	9.2
R_1120	396398	6956107	11.8	96.7	17.3	19.0	6.6	9.2
R_1121	396400	6955954	13.0	101.3	17.3	19.5	6.7	9.7
R_1122	396402	6955990	12.6	99.9	17.3	19.4	6.7	9.6
R_1123	396403	6956150	11.7	96.0	17.2	18.9	6.6	9.1
R_1124	396405	6956060	12.1	97.8	17.3	19.2	6.6	9.4
R_1125	396406	6956088	11.9	97.2	17.3	19.1	6.6	9.3
R_1126	396406	6956040	12.2	98.4	17.3	19.2	6.7	9.4
R_1127	396412	6956130	11.8	96.5	17.3	19.0	6.6	9.2
R_1128	396418	6956188	11.6	95.5	17.2	18.8	6.6	9.0
R_1129	396426	6955990	12.7	100.5	17.3	19.4	6.7	9.6
R_1130	396428	6956116	11.9	96.9	17.3	19.1	6.6	9.2
R_1131	396434	6956030	12.4	99.3	17.3	19.3	6.7	9.5
R_1132	396436	6956099	12.0	97.5	17.3	19.1	6.6	9.3
R_1133	396436	6956050	12.2	98.8	17.3	19.3	6.7	9.4
R_1134	396443	6954520	9.0	100.2	17.2	18.0	6.5	8.2
R_1135	396444	6956066	12.2	98.5	17.3	19.2	6.6	9.4
R_1136	396445	6956083	12.1	98.1	17.3	19.2	6.6	9.4
R_1137	396446	6955990	12.8	101.2	17.3	19.5	6.7	9.6
R_1138	396464	6956186	11.7	96.2	17.2	18.9	6.6	9.1
R_1139	396465	6954950	9.8	133.7	17.2	18.2	6.6	8.4
R_1140	396472	6955948	13.4	104.6	17.3	19.7	6.7	9.8
R_1141	396472	6954970	9.9	133.9	17.2	18.2	6.6	8.4
R_1142	396473	6956127	11.9	97.7	17.3	19.1	6.6	9.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1143	396473	6955050	10.2	140.2	17.2	18.4	6.6	8.5
R_1144	396475	6956149	11.9	97.3	17.3	19.1	6.6	9.2
R_1145	396475	6954990	9.9	134.8	17.2	18.2	6.6	8.4
R_1146	396476	6955030	10.1	137.7	17.2	18.3	6.6	8.4
R_1147	396477	6955010	10.0	135.9	17.2	18.3	6.6	8.4
R_1148	396477	6955913	13.9	107.2	17.3	19.8	6.7	10.0
R_1149	396480	6954940	9.8	130.1	17.2	18.2	6.6	8.3
R_1150	396482	6955980	13.0	103.4	17.3	19.6	6.7	9.8
R_1151	396482	6956070	12.3	99.6	17.3	19.3	6.7	9.5
R_1152	396485	6956000	12.8	102.5	17.3	19.5	6.7	9.7
R_1153	396486	6956095	12.1	98.9	17.3	19.2	6.6	9.4
R_1154	396488	6956039	12.5	101.0	17.3	19.4	6.7	9.6
R_1155	396488	6956180	11.8	96.9	17.3	19.0	6.6	9.2
R_1156	396488	6955090	10.3	139.9	17.2	18.4	6.6	8.6
R_1157	396489	6954930	9.7	127.6	17.2	18.1	6.6	8.3
R_1158	396490	6955100	10.4	140.1	17.2	18.4	6.6	8.6
R_1159	396490	6955120	10.5	141.3	17.2	18.5	6.6	8.6
R_1160	396492	6955140	10.6	141.7	17.2	18.5	6.6	8.6
R_1161	396493	6955040	10.1	135.2	17.2	18.3	6.6	8.5
R_1162	396497	6955150	10.6	141.5	17.2	18.5	6.6	8.7
R_1163	396498	6956118	12.1	98.7	17.3	19.2	6.6	9.4
R_1164	396499	6954920	9.7	125.1	17.2	18.1	6.6	8.3
R_1165	396499	6955170	10.7	141.8	17.2	18.6	6.6	8.7
R_1166	396503	6955190	10.8	141.8	17.2	18.6	6.6	8.8
R_1167	396503	6955200	10.9	141.9	17.2	18.6	6.6	8.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1168	396506	6955220	11.0	142.1	17.3	18.7	6.6	8.8
R_1169	396508	6954910	9.6	122.9	17.2	18.1	6.6	8.3
R_1170	396508	6954970	9.8	126.9	17.2	18.2	6.6	8.3
R_1171	396510	6955040	10.1	131.8	17.2	18.3	6.6	8.5
R_1172	396513	6954410	8.9	89.3	17.2	17.9	6.5	8.1
R_1173	396514	6954990	9.9	127.2	17.2	18.2	6.6	8.3
R_1174	396516	6956158	12.0	98.2	17.3	19.1	6.6	9.3
R_1175	396516	6955000	9.9	127.7	17.2	18.2	6.6	8.4
R_1176	396517	6954890	9.6	120.2	17.2	18.1	6.6	8.3
R_1177	396518	6954950	9.8	123.4	17.2	18.1	6.6	8.3
R_1178	396518	6955120	10.5	135.3	17.2	18.5	6.6	8.6
R_1179	396521	6955130	10.5	137.0	17.2	18.5	6.6	8.6
R_1180	396521	6955130	10.5	137.0	17.2	18.5	6.6	8.6
R_1181	396522	6955020	10.0	128.2	17.2	18.3	6.6	8.4
R_1182	396523	6955150	10.6	138.4	17.2	18.5	6.6	8.7
R_1183	396525	6956230	11.7	96.7	17.2	18.9	6.6	9.1
R_1184	396525	6955170	10.7	139.0	17.2	18.6	6.6	8.7
R_1185	396526	6954880	9.6	118.2	17.2	18.1	6.6	8.3
R_1186	396527	6955080	10.3	131.3	17.2	18.4	6.6	8.5
R_1187	396530	6955100	10.4	132.6	17.2	18.4	6.6	8.6
R_1188	396531	6954940	9.7	121.2	17.2	18.1	6.6	8.3
R_1189	396531	6955040	10.1	127.6	17.2	18.3	6.6	8.4
R_1190	396532	6955110	10.4	133.1	17.2	18.4	6.6	8.6
R_1191	396532	6955110	10.4	133.1	17.2	18.4	6.6	8.6
R_1192	396535	6954870	9.5	116.2	17.2	18.1	6.6	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1193	396535	6955130	10.5	134.5	17.2	18.5	6.6	8.6
R_1194	396535	6955130	10.5	134.5	17.2	18.5	6.6	8.6
R_1195	396538	6955150	10.6	135.8	17.2	18.5	6.6	8.7
R_1196	396540	6954930	9.7	119.1	17.2	18.1	6.6	8.3
R_1197	396540	6955160	10.7	135.9	17.2	18.5	6.6	8.7
R_1198	396541	6955180	10.8	137.0	17.2	18.6	6.6	8.7
R_1199	396542	6955110	10.4	131.4	17.2	18.4	6.6	8.6
R_1200	396542	6955110	10.4	131.4	17.2	18.4	6.6	8.6
R_1201	396544	6954860	9.5	114.3	17.2	18.1	6.6	8.2
R_1202	396544	6955130	10.5	132.9	17.2	18.5	6.6	8.6
R_1203	396546	6955200	10.9	136.9	17.2	18.6	6.6	8.8
R_1204	396546	6955210	10.9	137.0	17.2	18.6	6.6	8.8
R_1205	396549	6954920	9.7	117.0	17.2	18.1	6.6	8.3
R_1206	396553	6954850	9.5	112.5	17.2	18.0	6.6	8.2
R_1207	396558	6954910	9.6	115.0	17.2	18.1	6.6	8.3
R_1208	396561	6954830	9.4	110.6	17.2	18.0	6.6	8.2
R_1209	396567	6954890	9.6	112.7	17.2	18.1	6.6	8.2
R_1210	396569	6954980	9.9	117.7	17.2	18.2	6.6	8.3
R_1211	396571	6954820	9.4	108.9	17.2	18.0	6.6	8.2
R_1212	396571	6954840	9.4	109.6	17.2	18.0	6.6	8.2
R_1213	396575	6955000	9.9	118.6	17.2	18.2	6.6	8.4
R_1214	396576	6954880	9.5	110.9	17.2	18.0	6.6	8.2
R_1215	396576	6955040	10.1	120.5	17.2	18.3	6.6	8.4
R_1216	396577	6955020	10.0	119.3	17.2	18.3	6.6	8.4
R_1217	396579	6954810	9.4	107.5	17.2	18.0	6.6	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1218	396581	6954250	8.8	82.2	17.2	17.9	6.5	8.1
R_1219	396582	6955080	10.3	123.0	17.2	18.4	6.6	8.5
R_1220	396585	6954870	9.5	109.3	17.2	18.0	6.6	8.2
R_1221	396586	6955090	10.3	123.6	17.2	18.4	6.6	8.5
R_1222	396589	6954780	9.3	104.7	17.2	18.0	6.6	8.2
R_1223	396591	6955110	10.4	125.3	17.2	18.4	6.6	8.6
R_1224	396594	6954860	9.5	107.8	17.2	18.0	6.6	8.2
R_1225	396594	6954980	9.8	115.0	17.2	18.2	6.6	8.3
R_1226	396599	6955140	10.6	127.3	17.2	18.5	6.6	8.6
R_1227	396600	6954940	9.7	111.3	17.2	18.1	6.6	8.2
R_1228	396600	6955030	10.0	117.3	17.2	18.3	6.6	8.4
R_1229	396600	6955130	10.5	126.7	17.2	18.5	6.6	8.6
R_1230	396600	6955210	10.9	134.4	17.2	18.6	6.6	8.8
R_1231	396600	6955130	10.5	126.7	17.2	18.5	6.6	8.6
R_1232	396600	6955130	10.5	126.7	17.2	18.5	6.6	8.6
R_1233	396603	6954850	9.5	106.1	17.2	18.0	6.6	8.2
R_1234	396605	6954790	9.3	103.6	17.2	18.0	6.6	8.2
R_1235	396607	6955180	10.8	132.1	17.2	18.6	6.6	8.7
R_1236	396607	6955180	10.8	132.1	17.2	18.6	6.6	8.7
R_1237	396608	6955080	10.3	120.8	17.2	18.4	6.6	8.5
R_1238	396608	6955170	10.7	130.9	17.2	18.6	6.6	8.7
R_1239	396608	6955170	10.7	130.9	17.2	18.6	6.6	8.7
R_1240	396611	6954980	9.8	113.1	17.2	18.2	6.6	8.3
R_1241	396615	6954910	9.6	108.0	17.2	18.1	6.6	8.2
R_1242	396616	6954830	9.4	104.1	17.2	18.0	6.6	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1243	396616	6955020	10.0	115.3	17.2	18.3	6.6	8.4
R_1244	396620	6956214	12.2	100.6	17.3	19.3	6.7	9.5
R_1245	396621	6954800	9.3	102.5	17.2	18.0	6.6	8.2
R_1246	396624	6954570	9.0	92.2	17.2	17.9	6.5	8.1
R_1247	396624	6955080	10.3	120.1	17.2	18.4	6.6	8.5
R_1248	396625	6955200	10.9	134.8	17.2	18.6	6.6	8.8
R_1249	396626	6954930	9.7	108.2	17.2	18.1	6.6	8.2
R_1250	396626	6954980	9.8	112.1	17.2	18.2	6.6	8.3
R_1251	396628	6955110	10.4	122.8	17.2	18.4	6.6	8.6
R_1252	396628	6955110	10.4	122.8	17.2	18.4	6.6	8.6
R_1253	396631	6954900	9.6	106.2	17.2	18.1	6.6	8.2
R_1254	396631	6955020	10.0	114.9	17.2	18.3	6.6	8.4
R_1255	396632	6954410	8.9	85.5	17.2	17.9	6.5	8.1
R_1256	396635	6954820	9.4	102.1	17.2	18.0	6.6	8.2
R_1257	396639	6955080	10.3	119.3	17.2	18.4	6.6	8.5
R_1258	396641	6954980	9.8	110.8	17.2	18.2	6.6	8.3
R_1259	396642	6955170	10.7	130.3	17.2	18.6	6.6	8.7
R_1260	396642	6955170	10.7	130.3	17.2	18.6	6.6	8.7
R_1261	396642	6955170	10.7	130.3	17.2	18.6	6.6	8.7
R_1262	396642	6955170	10.7	130.3	17.2	18.6	6.6	8.7
R_1263	396643	6954890	9.6	104.7	17.2	18.0	6.6	8.2
R_1264	396643	6955160	10.7	128.8	17.2	18.5	6.6	8.7
R_1265	396643	6955160	10.7	128.8	17.2	18.5	6.6	8.7
R_1266	396645	6954930	9.7	107.0	17.2	18.1	6.6	8.2
R_1267	396646	6955020	10.0	113.9	17.2	18.3	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1268	396654	6955080	10.3	118.5	17.2	18.4	6.6	8.5
R_1269	396656	6954980	9.8	109.8	17.2	18.2	6.6	8.3
R_1270	396657	6954880	9.5	103.1	17.2	18.0	6.6	8.2
R_1271	396661	6954920	9.6	104.9	17.2	18.1	6.6	8.2
R_1272	396661	6955020	10.0	112.9	17.2	18.3	6.6	8.4
R_1273	396661	6955190	10.8	133.1	17.2	18.6	6.6	8.7
R_1274	396663	6955197	10.9	134.1	17.2	18.6	6.6	8.8
R_1275	396665	6954870	9.5	102.0	17.2	18.0	6.6	8.2
R_1276	396667	6955120	10.5	122.3	17.2	18.5	6.6	8.6
R_1277	396667	6955130	10.5	123.4	17.2	18.5	6.6	8.6
R_1278	396667	6955120	10.5	122.3	17.2	18.5	6.6	8.6
R_1279	396667	6955120	10.5	122.3	17.2	18.5	6.6	8.6
R_1280	396669	6955080	10.3	117.8	17.2	18.4	6.6	8.5
R_1281	396671	6954840	9.4	100.1	17.2	18.0	6.6	8.2
R_1282	396671	6954980	9.8	108.6	17.2	18.2	6.6	8.3
R_1283	396673	6954680	9.1	92.4	17.2	17.9	6.5	8.1
R_1284	396676	6954920	9.6	103.5	17.2	18.1	6.6	8.2
R_1285	396676	6955010	10.0	111.0	17.2	18.2	6.6	8.4
R_1286	396679	6954090	8.7	81.7	17.1	17.8	6.5	8.0
R_1287	396681	6955110	10.4	120.1	17.2	18.4	6.6	8.6
R_1288	396682	6954500	8.9	85.3	17.2	17.9	6.5	8.1
R_1289	396684	6955070	10.2	116.5	17.2	18.4	6.6	8.5
R_1290	396686	6954970	9.8	106.6	17.2	18.2	6.6	8.3
R_1291	396688	6954860	9.5	99.7	17.2	18.0	6.6	8.2
R_1292	396688	6955110	10.4	119.7	17.2	18.4	6.6	8.6

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1293	396688	6953990	8.6	81.8	17.1	17.8	6.5	8.0
R_1294	396691	6955010	10.0	110.2	17.2	18.2	6.6	8.4
R_1295	396691	6955190	10.8	131.9	17.2	18.6	6.6	8.7
R_1296	396691	6955190	10.8	131.9	17.2	18.6	6.6	8.7
R_1297	396692	6955110	10.4	119.4	17.2	18.4	6.6	8.6
R_1298	396692	6954910	9.6	101.5	17.2	18.1	6.6	8.2
R_1299	396697	6955110	10.4	119.0	17.2	18.4	6.6	8.6
R_1300	396698	6954810	9.4	96.5	17.2	17.9	6.6	8.1
R_1301	396699	6955070	10.2	115.5	17.2	18.4	6.6	8.5
R_1302	396701	6954970	9.8	105.4	17.2	18.2	6.6	8.3
R_1303	396701	6956345	11.8	98.6	17.3	19.1	6.6	9.3
R_1304	396702	6955110	10.4	118.5	17.2	18.4	6.6	8.6
R_1305	396704	6954870	9.5	98.6	17.2	18.0	6.6	8.1
R_1306	396706	6955010	10.0	109.5	17.2	18.2	6.6	8.4
R_1307	396707	6955110	10.4	118.2	17.2	18.4	6.6	8.6
R_1308	396708	6954800	9.3	95.1	17.2	17.9	6.6	8.1
R_1309	396708	6954910	9.6	100.1	17.2	18.1	6.6	8.2
R_1310	396714	6955070	10.2	114.3	17.2	18.3	6.6	8.5
R_1311	396715	6954670	9.1	88.4	17.2	17.9	6.5	8.1
R_1312	396716	6954970	9.8	104.2	17.2	18.2	6.6	8.3
R_1313	396718	6954170	8.7	81.2	17.1	17.8	6.5	8.0
R_1314	396719	6955110	10.4	117.3	17.2	18.4	6.6	8.5
R_1315	396719	6955110	10.4	117.3	17.2	18.4	6.6	8.5
R_1316	396719	6955110	10.4	117.3	17.2	18.4	6.6	8.5
R_1317	396720	6954820	9.4	95.2	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1318	396720	6955180	10.8	129.5	17.2	18.6	6.6	8.7
R_1319	396720	6955180	10.8	129.5	17.2	18.6	6.6	8.7
R_1320	396720	6955180	10.8	129.5	17.2	18.6	6.6	8.7
R_1321	396720	6955180	10.8	129.5	17.2	18.6	6.6	8.7
R_1322	396721	6955010	9.9	108.4	17.2	18.2	6.6	8.4
R_1323	396722	6954780	9.3	93.0	17.2	17.9	6.6	8.1
R_1324	396724	6954910	9.6	99.1	17.2	18.1	6.6	8.2
R_1325	396725	6954210	8.7	81.1	17.1	17.8	6.5	8.0
R_1326	396726	6954870	9.5	96.5	17.2	18.0	6.6	8.1
R_1327	396726	6955120	10.4	119.1	17.2	18.4	6.6	8.6
R_1328	396729	6955070	10.2	112.9	17.2	18.3	6.6	8.5
R_1329	396733	6955140	10.5	121.6	17.2	18.5	6.6	8.6
R_1330	396733	6955140	10.5	121.6	17.2	18.5	6.6	8.6
R_1331	396734	6954770	9.3	91.4	17.2	17.9	6.6	8.1
R_1332	396734	6954970	9.8	103.6	17.2	18.2	6.6	8.3
R_1333	396734	6955150	10.6	123.3	17.2	18.5	6.6	8.6
R_1334	396734	6955150	10.6	123.3	17.2	18.5	6.6	8.6
R_1335	396735	6956030	15.9	131.0	17.4	20.9	6.8	11.1
R_1336	396736	6955160	10.7	124.7	17.2	18.5	6.6	8.6
R_1337	396736	6955160	10.7	124.7	17.2	18.5	6.6	8.6
R_1338	396737	6954810	9.3	93.2	17.2	17.9	6.6	8.1
R_1339	396739	6955000	9.9	106.0	17.2	18.2	6.6	8.3
R_1340	396740	6954910	9.6	97.8	17.2	18.1	6.6	8.2
R_1341	396743	6954870	9.5	95.0	17.2	18.0	6.6	8.1
R_1342	396746	6954760	9.2	89.9	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1343	396748	6955060	10.2	110.7	17.2	18.3	6.6	8.4
R_1344	396749	6954970	9.8	102.6	17.2	18.2	6.6	8.3
R_1345	396750	6953940	8.6	81.5	17.1	17.8	6.5	8.0
R_1346	396752	6954290	8.8	80.6	17.2	17.8	6.5	8.0
R_1347	396753	6954800	9.3	91.3	17.2	17.9	6.6	8.1
R_1348	396754	6955000	9.9	104.9	17.2	18.2	6.6	8.3
R_1349	396754	6956071	16.1	130.4	17.4	20.9	6.8	11.1
R_1350	396756	6954750	9.2	88.3	17.2	17.9	6.6	8.1
R_1351	396756	6954910	9.6	96.7	17.2	18.1	6.6	8.2
R_1352	396756	6953970	8.6	81.4	17.1	17.8	6.5	8.0
R_1353	396758	6953990	8.6	81.3	17.1	17.8	6.5	8.0
R_1354	396759	6954860	9.4	93.2	17.2	18.0	6.6	8.1
R_1355	396761	6955100	10.3	114.2	17.2	18.4	6.6	8.5
R_1356	396762	6954010	8.6	81.3	17.1	17.8	6.5	8.0
R_1357	396764	6954040	8.6	81.2	17.1	17.8	6.5	8.0
R_1358	396764	6954960	9.7	100.6	17.2	18.1	6.6	8.3
R_1359	396764	6955060	10.1	109.4	17.2	18.3	6.6	8.4
R_1360	396765	6955110	10.4	115.0	17.2	18.4	6.6	8.5
R_1361	396767	6955150	10.6	120.5	17.2	18.5	6.6	8.6
R_1362	396767	6955130	10.5	117.6	17.2	18.4	6.6	8.6
R_1363	396767	6954740	9.2	86.9	17.2	17.9	6.5	8.1
R_1364	396768	6954800	9.3	90.1	17.2	17.9	6.6	8.1
R_1365	396769	6955000	9.9	103.8	17.2	18.2	6.6	8.3
R_1366	396770	6956661	10.3	93.1	17.2	18.2	6.6	8.4
R_1367	396770	6955170	10.7	123.3	17.2	18.5	6.6	8.6

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1368	396770	6955170	10.7	123.3	17.2	18.5	6.6	8.6
R_1369	396771	6954900	9.6	95.0	17.2	18.0	6.6	8.2
R_1370	396772	6955190	10.8	126.3	17.2	18.6	6.6	8.7
R_1371	396772	6955180	10.7	124.9	17.2	18.5	6.6	8.7
R_1372	396773	6954730	9.2	86.1	17.2	17.9	6.5	8.1
R_1373	396775	6954860	9.4	92.6	17.2	18.0	6.6	8.1
R_1374	396778	6954220	8.7	80.6	17.1	17.8	6.5	8.0
R_1375	396779	6954710	9.1	84.9	17.2	17.9	6.5	8.1
R_1376	396779	6954960	9.7	99.6	17.2	18.1	6.6	8.3
R_1377	396780	6955060	10.1	109.2	17.2	18.3	6.6	8.4
R_1378	396782	6954790	9.3	89.0	17.2	17.9	6.6	8.1
R_1379	396784	6953940	8.6	81.3	17.1	17.8	6.5	8.0
R_1380	396784	6955000	9.9	103.3	17.2	18.2	6.6	8.3
R_1381	396787	6954900	9.5	94.2	17.2	18.0	6.6	8.2
R_1382	396788	6954120	8.7	80.8	17.1	17.8	6.5	8.0
R_1383	396788	6954690	9.1	83.6	17.2	17.9	6.5	8.1
R_1384	396789	6953920	8.6	81.3	17.1	17.8	6.5	8.0
R_1385	396791	6954860	9.4	91.8	17.2	18.0	6.6	8.1
R_1386	396794	6954960	9.7	98.8	17.2	18.1	6.6	8.3
R_1387	396796	6954080	8.6	80.9	17.1	17.8	6.5	8.0
R_1388	396796	6953900	8.5	81.3	17.1	17.8	6.5	8.0
R_1389	396796	6955060	10.1	108.5	17.2	18.3	6.6	8.4
R_1390	396797	6954790	9.3	87.9	17.2	17.9	6.6	8.1
R_1391	396799	6955000	9.9	102.6	17.2	18.2	6.6	8.3
R_1392	396801	6953960	8.6	81.1	17.1	17.8	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1393	396803	6955120	10.4	114.8	17.2	18.4	6.6	8.5
R_1394	396803	6953980	8.6	81.1	17.1	17.8	6.5	8.0
R_1395	396803	6954900	9.5	93.4	17.2	18.0	6.6	8.2
R_1396	396806	6954670	9.1	81.9	17.2	17.9	6.5	8.1
R_1397	396807	6954160	8.7	80.6	17.1	17.8	6.5	8.0
R_1398	396807	6954860	9.4	91.1	17.2	18.0	6.6	8.1
R_1399	396808	6954000	8.6	81.0	17.1	17.8	6.5	8.0
R_1400	396808	6954000	8.6	81.0	17.1	17.8	6.5	8.0
R_1401	396809	6954360	8.8	76.8	17.2	17.8	6.5	8.0
R_1402	396809	6954960	9.7	97.9	17.2	18.1	6.6	8.3
R_1403	396810	6953970	8.6	81.0	17.1	17.8	6.5	8.0
R_1404	396810	6954020	8.6	80.9	17.1	17.8	6.5	8.0
R_1405	396812	6955090	10.3	111.0	17.2	18.3	6.6	8.5
R_1406	396812	6954700	9.1	82.5	17.2	17.9	6.5	8.1
R_1407	396812	6954720	9.2	83.2	17.2	17.9	6.5	8.1
R_1408	396812	6954730	9.2	83.7	17.2	17.9	6.5	8.1
R_1409	396812	6955060	10.1	107.9	17.2	18.3	6.6	8.4
R_1410	396813	6954040	8.6	80.8	17.1	17.8	6.5	8.0
R_1411	396813	6954750	9.2	84.4	17.2	17.9	6.5	8.1
R_1412	396814	6955150	10.6	117.4	17.2	18.5	6.6	8.6
R_1413	396814	6954990	9.8	100.9	17.2	18.2	6.6	8.3
R_1414	396815	6955160	10.6	119.4	17.2	18.5	6.6	8.6
R_1415	396815	6954800	9.3	87.4	17.2	17.9	6.6	8.1
R_1416	396818	6954760	9.2	85.2	17.2	17.9	6.6	8.1
R_1417	396819	6955180	10.7	121.8	17.2	18.5	6.6	8.6

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1418	396819	6954900	9.5	92.7	17.2	18.0	6.6	8.2
R_1419	396820	6955110	10.4	113.2	17.2	18.4	6.6	8.5
R_1420	396824	6954850	9.4	89.6	17.2	18.0	6.6	8.1
R_1421	396824	6954960	9.7	97.8	17.2	18.1	6.6	8.3
R_1422	396827	6954580	9.0	78.4	17.2	17.9	6.5	8.0
R_1423	396828	6955050	10.1	106.3	17.2	18.3	6.6	8.4
R_1424	396829	6954240	8.7	76.9	17.1	17.8	6.5	8.0
R_1425	396829	6954780	9.3	85.8	17.2	17.9	6.6	8.1
R_1426	396829	6954990	9.8	100.4	17.2	18.2	6.6	8.3
R_1427	396834	6955090	10.3	110.4	17.2	18.3	6.6	8.5
R_1428	396836	6954900	9.5	92.3	17.2	18.0	6.6	8.2
R_1429	396837	6955110	10.4	112.2	17.2	18.4	6.6	8.5
R_1430	396837	6955110	10.4	112.2	17.2	18.4	6.6	8.5
R_1431	396838	6954800	9.3	86.3	17.2	17.9	6.6	8.1
R_1432	396840	6954950	9.7	96.1	17.2	18.1	6.6	8.2
R_1433	396841	6954280	8.8	75.4	17.2	17.8	6.5	8.0
R_1434	396841	6955150	10.5	116.3	17.2	18.4	6.6	8.6
R_1435	396841	6955150	10.5	116.3	17.2	18.4	6.6	8.6
R_1436	396843	6955050	10.1	105.7	17.2	18.3	6.6	8.4
R_1437	396844	6954640	9.0	78.9	17.2	17.9	6.5	8.0
R_1438	396845	6954990	9.8	99.6	17.2	18.2	6.6	8.3
R_1439	396848	6954840	9.4	88.1	17.2	18.0	6.6	8.1
R_1440	396849	6955170	10.6	116.8	17.2	18.5	6.6	8.6
R_1441	396849	6954870	9.5	90.1	17.2	18.0	6.6	8.1
R_1442	396850	6955180	10.7	118.1	17.2	18.5	6.6	8.6

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1443	396851	6954660	9.1	79.3	17.2	17.9	6.5	8.0
R_1444	396855	6954880	9.5	90.2	17.2	18.0	6.6	8.1
R_1445	396855	6955080	10.2	108.0	17.2	18.3	6.6	8.4
R_1446	396855	6955080	10.2	108.0	17.2	18.3	6.6	8.4
R_1447	396856	6955100	10.3	109.9	17.2	18.4	6.6	8.5
R_1448	396856	6955100	10.3	109.9	17.2	18.4	6.6	8.5
R_1449	396858	6955050	10.1	104.8	17.2	18.3	6.6	8.4
R_1450	396859	6955150	10.5	115.0	17.2	18.4	6.6	8.6
R_1451	396859	6955150	10.5	115.0	17.2	18.4	6.6	8.6
R_1452	396860	6954370	8.8	74.3	17.2	17.8	6.5	8.0
R_1453	396861	6954680	9.1	80.6	17.2	17.9	6.5	8.0
R_1454	396862	6954900	9.5	91.0	17.2	18.0	6.6	8.2
R_1455	396866	6954640	9.0	77.7	17.2	17.9	6.5	8.0
R_1456	396866	6954690	9.1	80.7	17.2	17.9	6.5	8.0
R_1457	396867	6954940	9.7	93.9	17.2	18.1	6.6	8.2
R_1458	396870	6954710	9.1	80.9	17.2	17.9	6.5	8.0
R_1459	396870	6954960	9.7	95.5	17.2	18.1	6.6	8.2
R_1460	396873	6954980	9.8	97.2	17.2	18.1	6.6	8.3
R_1461	396873	6955050	10.1	104.0	17.2	18.3	6.6	8.4
R_1462	396874	6954720	9.2	81.0	17.2	17.9	6.5	8.0
R_1463	396877	6955080	10.2	106.5	17.2	18.3	6.6	8.4
R_1464	396877	6955080	10.2	106.5	17.2	18.3	6.6	8.4
R_1465	396878	6954740	9.2	81.3	17.2	17.9	6.5	8.0
R_1466	396879	6955000	9.9	98.8	17.2	18.2	6.6	8.3
R_1467	396881	6954750	9.2	81.4	17.2	17.9	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1468	396882	6954650	9.1	78.1	17.2	17.8	6.5	8.0
R_1469	396884	6956860	9.9	89.5	17.2	18.0	6.6	8.2
R_1470	396885	6954770	9.2	82.2	17.2	17.9	6.6	8.0
R_1471	396885	6954790	9.3	83.6	17.2	17.9	6.6	8.1
R_1472	396889	6955040	10.0	101.9	17.2	18.2	6.6	8.4
R_1473	396891	6954070	8.6	77.0	17.1	17.7	6.5	7.9
R_1474	396894	6954840	9.4	86.4	17.2	17.9	6.6	8.1
R_1475	396895	6955150	10.5	111.5	17.2	18.4	6.6	8.5
R_1476	396898	6954000	8.6	78.3	17.1	17.7	6.5	7.9
R_1477	396898	6954110	8.6	75.6	17.1	17.7	6.5	7.9
R_1478	396898	6956550	11.1	96.6	17.2	18.6	6.6	8.8
R_1479	396901	6954120	8.6	75.2	17.1	17.8	6.5	7.9
R_1480	396902	6954040	8.6	77.1	17.1	17.7	6.5	7.9
R_1481	396902	6954650	9.1	78.3	17.2	17.8	6.5	8.0
R_1482	396903	6955080	10.2	104.6	17.2	18.3	6.6	8.4
R_1483	396903	6954670	9.1	80.5	17.2	17.8	6.5	8.0
R_1484	396904	6954020	8.6	77.4	17.1	17.7	6.5	7.9
R_1485	396905	6954680	9.1	80.6	17.2	17.8	6.5	8.0
R_1486	396906	6954150	8.7	74.1	17.1	17.8	6.5	7.9
R_1487	396907	6954790	9.3	83.9	17.2	17.9	6.6	8.0
R_1488	396909	6954700	9.1	80.8	17.2	17.8	6.5	8.0
R_1489	396913	6954090	8.6	75.1	17.1	17.7	6.5	7.9
R_1490	396913	6954710	9.1	80.9	17.2	17.8	6.5	8.0
R_1491	396913	6954840	9.4	85.3	17.2	17.9	6.6	8.1
R_1492	396913	6954880	9.5	87.2	17.2	18.0	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1493	396915	6954380	8.8	74.9	17.2	17.8	6.5	8.0
R_1494	396917	6954730	9.2	81.2	17.2	17.8	6.5	8.0
R_1495	396917	6954900	9.5	88.0	17.2	18.0	6.6	8.1
R_1496	396919	6954070	8.6	75.2	17.1	17.7	6.5	7.9
R_1497	396920	6954740	9.2	81.3	17.2	17.8	6.5	8.0
R_1498	396921	6954910	9.6	88.8	17.2	18.0	6.6	8.2
R_1499	396922	6955491	12.0	136.2	17.3	19.0	6.7	9.2
R_1500	396924	6954780	9.3	83.9	17.2	17.9	6.6	8.0
R_1501	396925	6954930	9.6	90.0	17.2	18.1	6.6	8.2
R_1502	396926	6954090	8.6	75.4	17.1	17.7	6.5	7.9
R_1503	396926	6954190	8.7	75.2	17.1	17.8	6.5	8.0
R_1504	396926	6954760	9.2	82.1	17.2	17.9	6.6	8.0
R_1505	396929	6954440	8.9	75.2	17.2	17.8	6.5	8.0
R_1506	396929	6954940	9.6	90.5	17.2	18.1	6.6	8.2
R_1507	396931	6954140	8.6	75.9	17.1	17.8	6.5	7.9
R_1508	396932	6954840	9.4	85.4	17.2	17.9	6.6	8.1
R_1509	396933	6954960	9.7	92.0	17.2	18.1	6.6	8.2
R_1510	396937	6954970	9.7	92.6	17.2	18.1	6.6	8.2
R_1511	396941	6954990	9.8	94.1	17.2	18.1	6.6	8.3
R_1512	396942	6954780	9.2	84.5	17.2	17.9	6.6	8.0
R_1513	396944	6954010	8.6	75.2	17.1	17.7	6.5	7.9
R_1514	396944	6955000	9.8	94.7	17.2	18.2	6.6	8.3
R_1515	396945	6957190	9.5	73.7	17.2	17.8	6.6	8.0
R_1516	396945	6955020	9.9	96.2	17.2	18.2	6.6	8.3
R_1517	396945	6955050	10.0	98.6	17.2	18.2	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1518	396946	6954080	8.6	76.5	17.1	17.7	6.5	7.9
R_1519	396948	6954180	8.7	77.0	17.1	17.8	6.5	7.9
R_1520	396952	6954830	9.3	85.5	17.2	17.9	6.6	8.1
R_1521	396952	6954870	9.4	85.7	17.2	18.0	6.6	8.1
R_1522	396953	6954130	8.6	77.4	17.1	17.7	6.5	7.9
R_1523	396953	6954200	8.7	77.2	17.1	17.8	6.5	8.0
R_1524	396954	6954620	9.0	75.9	17.2	17.8	6.5	8.0
R_1525	396954	6954660	9.1	79.9	17.2	17.8	6.5	8.0
R_1526	396956	6954890	9.5	85.7	17.2	18.0	6.6	8.1
R_1527	396957	6955090	10.2	100.8	17.2	18.3	6.6	8.4
R_1528	396959	6957160	9.5	73.9	17.2	17.8	6.6	8.0
R_1529	396960	6954900	9.5	86.0	17.2	18.0	6.6	8.1
R_1530	396960	6957090	9.6	74.7	17.2	17.9	6.6	8.1
R_1531	396961	6954600	9.0	74.0	17.2	17.9	6.5	8.0
R_1532	396962	6954010	8.6	75.6	17.1	17.7	6.5	7.9
R_1533	396962	6954690	9.1	80.8	17.2	17.9	6.5	8.0
R_1534	396964	6954920	9.6	87.2	17.2	18.0	6.6	8.1
R_1535	396965	6954190	8.7	78.3	17.1	17.8	6.5	7.9
R_1536	396965	6954220	8.7	78.0	17.1	17.8	6.5	8.0
R_1537	396965	6955040	10.0	96.5	17.2	18.2	6.6	8.3
R_1538	396966	6954260	8.7	77.4	17.1	17.8	6.5	8.0
R_1539	396966	6954580	9.0	72.4	17.2	17.9	6.5	8.0
R_1540	396967	6957130	9.5	74.2	17.2	17.9	6.6	8.0
R_1541	396968	6954070	8.6	77.5	17.1	17.7	6.5	7.9
R_1542	396968	6954930	9.6	87.7	17.2	18.0	6.6	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1543	396970	6954240	8.7	78.2	17.1	17.8	6.5	8.0
R_1544	396970	6954560	9.0	74.4	17.2	17.9	6.5	8.0
R_1545	396970	6954710	9.1	80.9	17.2	17.9	6.5	8.0
R_1546	396970	6957049	9.6	75.1	17.2	17.9	6.6	8.1
R_1547	396972	6955116	10.3	101.2	17.2	18.3	6.6	8.4
R_1548	396972	6955134	10.4	102.2	17.2	18.4	6.6	8.5
R_1549	396972	6954950	9.7	88.9	17.2	18.1	6.6	8.2
R_1550	396972	6955369	11.5	105.4	17.3	18.7	6.6	8.8
R_1551	396974	6954130	8.6	78.8	17.1	17.7	6.5	7.9
R_1552	396975	6954720	9.1	81.0	17.2	17.9	6.5	8.0
R_1553	396976	6954960	9.7	89.5	17.2	18.1	6.6	8.2
R_1554	396977	6954620	9.0	76.1	17.2	17.9	6.5	8.0
R_1555	396978	6954670	9.1	80.6	17.2	17.9	6.5	8.0
R_1556	396978	6957200	9.5	73.5	17.2	17.8	6.6	8.0
R_1557	396979	6955151	10.5	102.5	17.2	18.4	6.6	8.5
R_1558	396980	6954740	9.2	81.2	17.2	17.9	6.5	8.0
R_1559	396980	6954980	9.7	90.7	17.2	18.1	6.6	8.2
R_1560	396982	6954780	9.2	85.1	17.2	17.9	6.6	8.0
R_1561	396982	6955030	9.9	94.6	17.2	18.2	6.6	8.3
R_1562	396982	6955090	10.2	98.7	17.2	18.3	6.6	8.4
R_1563	396983	6954190	8.7	79.7	17.1	17.8	6.5	7.9
R_1564	396984	6954000	8.6	76.0	17.1	17.7	6.5	7.9
R_1565	396984	6954200	8.7	79.8	17.1	17.8	6.5	7.9
R_1566	396984	6954750	9.2	82.0	17.2	17.9	6.5	8.0
R_1567	396984	6955000	9.8	91.9	17.2	18.1	6.6	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1568	396988	6954080	8.6	78.8	17.1	17.7	6.5	7.9
R_1569	396989	6954300	8.7	78.6	17.2	17.8	6.5	8.0
R_1570	396989	6954570	9.0	76.1	17.2	17.9	6.5	8.0
R_1571	396991	6955010	9.8	92.3	17.2	18.2	6.6	8.3
R_1572	396992	6954260	8.7	79.9	17.1	17.8	6.5	8.0
R_1573	396992	6954620	9.0	76.2	17.2	17.9	6.5	8.0
R_1574	396995	6954120	8.6	80.0	17.1	17.7	6.5	7.9
R_1575	396995	6954320	8.8	78.6	17.2	17.8	6.5	8.0
R_1576	396995	6954680	9.1	80.7	17.2	17.9	6.5	8.0
R_1577	396995	6954830	9.3	85.8	17.2	17.9	6.6	8.0
R_1578	396996	6956938	9.8	76.5	17.2	18.0	6.6	8.2
R_1579	396999	6956897	9.8	79.4	17.2	18.0	6.6	8.2
R_1580	396999	6955090	10.2	97.3	17.2	18.3	6.6	8.4
R_1581	397000	6957230	9.4	73.1	17.2	17.8	6.6	8.0
R_1582	397001	6954700	9.1	80.8	17.2	17.9	6.5	8.0
R_1583	397002	6954770	9.2	85.0	17.2	17.9	6.6	8.0
R_1584	397002	6955030	9.9	93.2	17.2	18.2	6.6	8.3
R_1585	397003	6954580	9.0	76.9	17.2	17.9	6.5	8.0
R_1586	397004	6955142	10.4	99.4	17.2	18.4	6.6	8.5
R_1587	397004	6954000	8.5	76.6	17.1	17.7	6.5	7.9
R_1588	397004	6954190	8.7	81.4	17.1	17.8	6.5	7.9
R_1589	397006	6954070	8.6	79.3	17.1	17.7	6.5	7.9
R_1590	397007	6954620	9.0	76.4	17.2	17.9	6.5	8.0
R_1591	397007	6954710	9.1	80.9	17.2	17.9	6.5	8.0
R_1592	397011	6954240	8.7	81.8	17.1	17.8	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1593	397011	6954880	9.5	86.3	17.2	18.0	6.6	8.1
R_1594	397014	6954720	9.1	81.0	17.2	17.9	6.5	8.0
R_1595	397015	6954120	8.6	81.2	17.1	17.7	6.5	7.9
R_1596	397015	6955080	10.1	95.7	17.2	18.3	6.6	8.4
R_1597	397016	6954300	8.7	81.2	17.2	17.8	6.5	8.0
R_1598	397016	6954830	9.3	85.9	17.2	17.9	6.6	8.0
R_1599	397017	6954870	9.4	86.3	17.2	17.9	6.6	8.1
R_1600	397017	6954870	9.4	86.3	17.2	17.9	6.6	8.1
R_1601	397018	6954330	8.8	80.6	17.2	17.8	6.5	8.0
R_1602	397018	6954350	8.8	79.9	17.2	17.8	6.5	8.0
R_1603	397018	6954580	9.0	77.1	17.2	17.9	6.5	8.0
R_1604	397019	6955137	10.4	98.1	17.2	18.3	6.6	8.5
R_1605	397020	6954740	9.2	81.1	17.2	17.9	6.5	8.0
R_1606	397021	6956772	10.2	92.2	17.2	18.2	6.6	8.4
R_1607	397023	6954360	8.8	80.0	17.2	17.8	6.5	8.0
R_1608	397024	6953990	8.5	76.6	17.1	17.7	6.5	7.9
R_1609	397024	6954770	9.2	85.1	17.2	17.9	6.6	8.0
R_1610	397025	6954190	8.7	83.0	17.1	17.8	6.5	7.9
R_1611	397027	6954630	9.0	77.4	17.2	17.9	6.5	8.0
R_1612	397029	6954070	8.6	80.3	17.1	17.7	6.5	7.9
R_1613	397029	6954380	8.8	79.9	17.2	17.8	6.5	8.0
R_1614	397029	6954750	9.2	82.2	17.2	17.9	6.5	8.0
R_1615	397030	6955080	10.1	94.9	17.2	18.3	6.6	8.4
R_1616	397030	6954870	9.4	86.4	17.2	17.9	6.6	8.1
R_1617	397031	6955132	10.4	97.1	17.2	18.3	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1618	397031	6954240	8.7	83.5	17.1	17.8	6.5	7.9
R_1619	397031	6954300	8.7	82.7	17.2	17.8	6.5	8.0
R_1620	397032	6957170	9.5	73.4	17.2	17.8	6.6	8.0
R_1621	397033	6957250	9.4	70.8	17.2	17.8	6.6	8.0
R_1622	397035	6954820	9.3	85.9	17.2	17.9	6.6	8.0
R_1623	397036	6954120	8.6	82.3	17.1	17.7	6.5	7.9
R_1624	397038	6956969	9.7	75.9	17.2	18.0	6.6	8.2
R_1625	397041	6957200	9.5	73.1	17.2	17.8	6.6	8.0
R_1626	397045	6954980	9.7	87.2	17.2	18.1	6.6	8.2
R_1627	397045	6954300	8.7	84.1	17.2	17.8	6.5	8.0
R_1628	397045	6955070	10.1	93.5	17.2	18.2	6.6	8.3
R_1629	397046	6955126	10.3	95.9	17.2	18.3	6.6	8.4
R_1630	397046	6954180	8.7	84.3	17.1	17.7	6.5	7.9
R_1631	397047	6954770	9.2	85.1	17.2	17.9	6.6	8.0
R_1632	397047	6954870	9.4	86.5	17.2	17.9	6.6	8.1
R_1633	397047	6954870	9.4	86.5	17.2	17.9	6.6	8.1
R_1634	397049	6954590	9.0	77.5	17.2	17.9	6.5	8.0
R_1635	397050	6954070	8.6	81.1	17.1	17.7	6.5	7.9
R_1636	397051	6954670	9.1	80.5	17.2	17.9	6.5	8.0
R_1637	397052	6954960	9.7	86.9	17.2	18.0	6.6	8.2
R_1638	397052	6954230	8.7	85.3	17.1	17.8	6.5	7.9
R_1639	397053	6954377	8.8	82.7	17.2	17.8	6.5	8.0
R_1640	397053	6954820	9.3	85.9	17.2	17.9	6.6	8.0
R_1641	397053	6957270	9.4	70.8	17.2	17.8	6.6	8.0
R_1642	397055	6956692	10.7	94.1	17.2	18.4	6.6	8.6

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1643	397057	6954110	8.6	82.9	17.1	17.7	6.5	7.9
R_1644	397058	6954680	9.1	80.6	17.2	17.9	6.5	8.0
R_1645	397059	6954630	9.0	77.4	17.2	17.9	6.5	8.0
R_1646	397060	6954310	8.7	85.4	17.2	17.8	6.5	8.0
R_1647	397061	6955070	10.1	92.9	17.2	18.2	6.6	8.3
R_1648	397061	6954410	8.8	82.2	17.2	17.8	6.5	8.0
R_1649	397063	6954700	9.1	80.8	17.2	17.9	6.5	8.0
R_1650	397064	6955120	10.3	95.1	17.2	18.3	6.6	8.4
R_1651	397066	6954180	8.6	85.6	17.1	17.7	6.5	7.9
R_1652	397066	6954430	8.8	81.7	17.2	17.8	6.5	8.0
R_1653	397067	6954460	8.9	80.2	17.2	17.8	6.5	8.0
R_1654	397069	6954870	9.4	86.7	17.2	17.9	6.6	8.1
R_1655	397069	6954870	9.4	86.7	17.2	17.9	6.6	8.1
R_1656	397070	6954060	8.6	81.2	17.1	17.7	6.5	7.9
R_1657	397070	6957230	9.5	70.9	17.2	17.8	6.6	8.0
R_1658	397071	6954377	8.8	84.7	17.2	17.8	6.5	8.0
R_1659	397071	6954710	9.1	80.8	17.2	17.9	6.5	8.0
R_1660	397072	6954450	8.9	81.4	17.2	17.8	6.5	8.0
R_1661	397073	6954230	8.7	86.9	17.1	17.8	6.5	7.9
R_1662	397074	6954820	9.3	86.0	17.2	17.9	6.6	8.0
R_1663	397077	6954110	8.6	83.8	17.1	17.7	6.5	7.9
R_1664	397077	6954290	8.7	87.3	17.2	17.8	6.5	7.9
R_1665	397077	6954484	8.9	79.9	17.2	17.9	6.5	8.0
R_1666	397078	6955117	10.3	94.5	17.2	18.3	6.6	8.4
R_1667	397078	6954730	9.2	80.9	17.2	17.9	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1668	397079	6955060	10.0	91.5	17.2	18.2	6.6	8.3
R_1669	397083	6954750	9.2	81.6	17.2	17.9	6.5	8.0
R_1670	397084	6954640	9.1	78.2	17.2	17.9	6.5	8.0
R_1671	397085	6957094	9.6	73.9	17.2	17.9	6.6	8.1
R_1672	397087	6954180	8.6	86.9	17.1	17.7	6.5	7.9
R_1673	397090	6954860	9.4	86.7	17.2	17.9	6.6	8.1
R_1674	397090	6954860	9.4	86.7	17.2	17.9	6.6	8.1
R_1675	397091	6954060	8.6	81.7	17.1	17.7	6.5	7.9
R_1676	397091	6954650	9.1	79.0	17.2	17.9	6.5	8.0
R_1677	397092	6954220	8.7	88.1	17.1	17.8	6.5	7.9
R_1678	397094	6956980	9.7	75.4	17.2	18.0	6.6	8.2
R_1679	397094	6955112	10.2	94.1	17.2	18.3	6.6	8.4
R_1680	397094	6957290	9.5	70.9	17.2	17.8	6.6	8.0
R_1681	397095	6954290	8.7	88.9	17.2	17.8	6.5	7.9
R_1682	397097	6954367	8.8	87.9	17.2	17.8	6.5	8.0
R_1683	397097	6954240	8.7	88.8	17.1	17.8	6.5	7.9
R_1684	397097	6954670	9.1	80.4	17.2	17.9	6.5	8.0
R_1685	397098	6954110	8.6	84.6	17.1	17.7	6.5	7.9
R_1686	397098	6954430	8.8	85.6	17.2	17.8	6.5	8.0
R_1687	397098	6954750	9.2	81.3	17.2	17.9	6.5	8.0
R_1688	397098	6955060	10.0	90.7	17.2	18.2	6.6	8.3
R_1689	397104	6957270	9.5	70.9	17.2	17.8	6.6	8.0
R_1690	397104	6954690	9.1	80.6	17.2	17.9	6.5	8.0
R_1691	397104	6956845	10.1	81.0	17.2	18.1	6.6	8.3
R_1692	397108	6954491	8.9	83.4	17.2	17.9	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1693	397108	6954180	8.6	88.0	17.1	17.7	6.5	7.9
R_1694	397109	6953980	8.5	76.7	17.1	17.7	6.5	7.9
R_1695	397110	6955105	10.2	93.4	17.2	18.3	6.6	8.4
R_1696	397111	6954800	9.3	85.6	17.2	17.9	6.6	8.0
R_1697	397111	6955040	9.9	88.7	17.2	18.2	6.6	8.3
R_1698	397111	6957180	9.5	71.1	17.2	17.8	6.6	8.0
R_1699	397112	6954060	8.6	82.1	17.1	17.7	6.5	7.9
R_1700	397112	6954740	9.2	80.9	17.2	17.9	6.5	8.0
R_1701	397113	6954710	9.1	80.8	17.2	17.9	6.5	8.0
R_1702	397114	6954220	8.7	89.6	17.1	17.8	6.5	7.9
R_1703	397115	6954300	8.7	90.7	17.2	17.8	6.5	7.9
R_1704	397115	6954980	9.7	88.1	17.2	18.1	6.6	8.2
R_1705	397118	6954970	9.7	88.2	17.2	18.0	6.6	8.2
R_1706	397118	6955010	9.8	88.0	17.2	18.1	6.6	8.2
R_1707	397118	6955031	9.9	88.5	17.2	18.1	6.6	8.3
R_1708	397119	6954110	8.6	85.3	17.1	17.7	6.5	7.9
R_1709	397119	6954940	9.6	88.1	17.2	18.0	6.6	8.1
R_1710	397119	6957120	9.6	73.3	17.2	17.9	6.6	8.1
R_1711	397120	6954430	8.8	88.3	17.2	17.8	6.5	8.0
R_1712	397125	6954367	8.8	91.0	17.2	17.8	6.5	7.9
R_1713	397127	6954493	8.9	85.8	17.2	17.9	6.5	8.0
R_1714	397127	6954730	9.2	80.9	17.2	17.9	6.5	8.0
R_1715	397129	6955097	10.2	92.3	17.2	18.3	6.6	8.4
R_1716	397129	6954160	8.6	88.2	17.1	17.7	6.5	7.9
R_1717	397131	6954790	9.3	85.4	17.2	17.9	6.6	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1718	397132	6953980	8.5	76.5	17.1	17.7	6.5	7.9
R_1719	397133	6954050	8.6	81.6	17.1	17.7	6.5	7.9
R_1720	397133	6954290	8.7	92.2	17.2	17.8	6.5	7.9
R_1721	397134	6955081	10.1	91.0	17.2	18.2	6.6	8.3
R_1722	397134	6954920	9.5	88.1	17.2	18.0	6.6	8.1
R_1723	397134	6956742	10.6	92.2	17.2	18.3	6.6	8.5
R_1724	397135	6957220	9.5	71.1	17.2	17.8	6.6	8.0
R_1725	397135	6954220	8.7	90.9	17.1	17.7	6.5	7.9
R_1726	397135	6954820	9.3	86.1	17.2	17.9	6.6	8.0
R_1727	397137	6954910	9.5	88.0	17.2	18.0	6.6	8.1
R_1728	397140	6954100	8.6	85.1	17.1	17.7	6.5	7.9
R_1729	397140	6954890	9.5	87.7	17.2	17.9	6.6	8.1
R_1730	397140	6957320	9.5	71.0	17.2	17.8	6.6	8.0
R_1731	397141	6954720	9.2	80.8	17.2	17.9	6.5	8.0
R_1732	397143	6954367	8.8	93.0	17.2	17.8	6.5	7.9
R_1733	397143	6954420	8.8	91.5	17.2	17.8	6.5	8.0
R_1734	397144	6955069	10.1	89.7	17.2	18.2	6.6	8.3
R_1735	397144	6954870	9.4	87.3	17.2	17.9	6.6	8.1
R_1736	397146	6957300	9.5	71.0	17.2	17.8	6.6	8.0
R_1737	397146	6954780	9.2	85.2	17.2	17.9	6.6	8.0
R_1738	397148	6954497	8.9	88.4	17.2	17.9	6.5	8.0
R_1739	397149	6954170	8.6	89.4	17.1	17.7	6.5	7.9
R_1740	397149	6957150	9.6	71.3	17.2	17.9	6.6	8.0
R_1741	397150	6955040	9.9	88.7	17.2	18.1	6.6	8.3
R_1742	397151	6954290	8.7	93.7	17.2	17.8	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1743	397151	6956801	10.3	85.3	17.2	18.2	6.6	8.4
R_1744	397153	6953980	8.5	76.3	17.1	17.7	6.5	7.9
R_1745	397153	6954050	8.6	81.7	17.1	17.7	6.5	7.9
R_1746	397156	6954850	9.4	86.9	17.2	17.9	6.6	8.1
R_1747	397156	6954220	8.7	92.0	17.1	17.7	6.5	7.9
R_1748	397160	6954100	8.6	85.4	17.1	17.7	6.5	7.9
R_1749	397161	6954990	9.8	89.1	17.2	18.1	6.6	8.2
R_1750	397161	6954420	8.8	93.7	17.2	17.8	6.5	8.0
R_1751	397162	6954357	8.8	95.0	17.2	17.8	6.5	7.9
R_1752	397162	6954970	9.7	89.1	17.2	18.0	6.6	8.1
R_1753	397163	6955032	9.9	88.9	17.2	18.1	6.6	8.2
R_1754	397163	6954770	9.2	83.5	17.2	17.9	6.6	8.1
R_1755	397164	6954910	9.5	88.3	17.2	17.9	6.6	8.1
R_1756	397164	6954940	9.6	88.8	17.2	18.0	6.6	8.1
R_1757	397165	6957180	9.6	71.3	17.2	17.8	6.6	8.0
R_1758	397166	6954495	8.9	91.0	17.2	17.9	6.5	8.0
R_1759	397168	6954890	9.5	87.9	17.2	17.9	6.6	8.1
R_1760	397169	6953720	8.4	71.2	17.1	17.6	6.5	7.8
R_1761	397169	6956834	10.2	78.8	17.2	18.2	6.6	8.4
R_1762	397170	6954170	8.6	90.0	17.1	17.7	6.5	7.9
R_1763	397170	6954290	8.7	95.1	17.2	17.8	6.5	7.9
R_1764	397172	6955019	9.9	89.2	17.2	18.1	6.6	8.2
R_1765	397172	6953970	8.5	75.1	17.1	17.7	6.5	7.9
R_1766	397174	6954050	8.5	81.6	17.1	17.7	6.5	7.9
R_1767	397177	6954210	8.7	92.5	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1768	397177	6954420	8.8	95.7	17.2	17.8	6.5	8.0
R_1769	397178	6954910	9.5	88.5	17.2	17.9	6.6	8.1
R_1770	397180	6954357	8.8	96.8	17.2	17.8	6.5	7.9
R_1771	397180	6954840	9.4	86.7	17.2	17.9	6.6	8.1
R_1772	397181	6954100	8.6	85.5	17.1	17.7	6.5	7.9
R_1773	397183	6954801	9.3	85.6	17.2	17.9	6.6	8.1
R_1774	397183	6954890	9.5	88.1	17.2	17.9	6.6	8.1
R_1775	397183	6957038	9.7	73.8	17.2	17.9	6.6	8.1
R_1776	397184	6957210	9.5	71.3	17.2	17.8	6.6	8.0
R_1777	397186	6954880	9.4	87.8	17.2	18.0	6.6	8.1
R_1778	397186	6957330	9.5	71.1	17.2	17.8	6.6	8.0
R_1779	397187	6954860	9.4	87.3	17.2	18.0	6.6	8.1
R_1780	397188	6954813	9.3	85.9	17.2	18.0	6.6	8.1
R_1781	397188	6954494	8.9	94.2	17.2	17.9	6.5	8.0
R_1782	397188	6954290	8.7	96.4	17.2	17.8	6.5	7.9
R_1783	397189	6957320	9.5	71.1	17.2	17.8	6.6	8.0
R_1784	397191	6954160	8.6	89.9	17.1	17.7	6.5	7.9
R_1785	397192	6953970	8.5	74.6	17.1	17.7	6.5	7.9
R_1786	397192	6954900	9.5	88.4	17.2	18.0	6.6	8.1
R_1787	397194	6954900	9.5	88.4	17.2	18.0	6.6	8.1
R_1788	397194	6954420	8.8	97.7	17.2	17.8	6.5	7.9
R_1789	397195	6954050	8.5	81.4	17.1	17.7	6.5	7.9
R_1790	397197	6954210	8.6	93.2	17.1	17.7	6.5	7.9
R_1791	397199	6954357	8.8	98.6	17.2	17.8	6.5	7.9
R_1792	397199	6954700	9.1	80.6	17.2	17.9	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1793	397202	6954090	8.6	84.7	17.1	17.7	6.5	7.9
R_1794	397207	6954280	8.7	97.3	17.1	17.8	6.5	7.9
R_1795	397208	6954488	8.9	97.3	17.2	17.9	6.5	8.0
R_1796	397212	6954160	8.6	90.2	17.1	17.7	6.5	7.9
R_1797	397215	6954040	8.5	80.2	17.1	17.7	6.5	7.9
R_1798	397217	6954720	9.2	81.9	17.2	17.9	6.5	8.1
R_1799	397217	6953970	8.5	73.8	17.1	17.7	6.5	7.9
R_1800	397218	6954210	8.6	93.9	17.1	17.7	6.5	7.9
R_1801	397219	6957240	9.6	71.3	17.2	17.8	6.6	8.0
R_1802	397219	6954410	8.8	99.5	17.2	17.8	6.5	7.9
R_1803	397220	6955110	10.2	90.6	17.2	18.2	6.6	8.3
R_1804	397220	6957330	9.5	71.2	17.2	17.8	6.6	8.0
R_1805	397222	6954090	8.6	84.5	17.1	17.7	6.5	7.9
R_1806	397225	6954280	8.7	98.2	17.1	17.8	6.5	7.9
R_1807	397226	6954357	8.8	99.5	17.2	17.8	6.5	7.9
R_1808	397230	6954488	8.9	99.4	17.2	17.9	6.5	8.0
R_1809	397230	6955069	10.0	90.0	17.2	18.1	6.6	8.3
R_1810	397232	6954160	8.6	90.3	17.1	17.7	6.5	7.9
R_1811	397236	6953960	8.5	72.2	17.1	17.7	6.5	7.9
R_1812	397236	6954670	9.1	87.3	17.2	17.9	6.5	8.0
R_1813	397236	6954040	8.5	79.7	17.1	17.7	6.5	7.9
R_1814	397239	6954210	8.6	94.3	17.1	17.7	6.5	7.9
R_1815	397240	6954400	8.8	99.7	17.2	17.8	6.5	7.9
R_1816	397243	6954090	8.6	84.1	17.1	17.7	6.5	7.9
R_1817	397243	6957340	9.6	71.3	17.2	17.8	6.6	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1818	397244	6953710	8.4	68.3	17.1	17.6	6.5	7.8
R_1819	397244	6954280	8.7	99.1	17.1	17.8	6.5	7.9
R_1820	397245	6955021	9.8	91.0	17.2	18.1	6.6	8.2
R_1821	397248	6957270	9.6	71.4	17.2	17.8	6.6	8.0
R_1822	397249	6954720	9.2	88.8	17.2	18.0	6.5	8.1
R_1823	397250	6954966	9.7	90.5	17.2	18.0	6.6	8.1
R_1824	397252	6954991	9.7	91.0	17.2	18.0	6.6	8.1
R_1825	397252	6954340	8.7	99.6	17.2	17.8	6.5	7.9
R_1826	397253	6954160	8.6	90.3	17.1	17.7	6.5	7.9
R_1827	397254	6955053	10.0	91.0	17.2	18.1	6.6	8.2
R_1828	397257	6955110	10.2	90.5	17.2	18.2	6.6	8.3
R_1829	397257	6954040	8.5	79.0	17.1	17.7	6.5	7.9
R_1830	397257	6954400	8.8	99.8	17.2	17.8	6.5	7.9
R_1831	397260	6954200	8.6	93.8	17.1	17.7	6.5	7.9
R_1832	397261	6953960	8.5	71.1	17.1	17.7	6.5	7.9
R_1833	397262	6954270	8.7	99.1	17.1	17.8	6.5	7.9
R_1834	397264	6954080	8.6	82.6	17.1	17.7	6.5	7.9
R_1835	397266	6957350	9.6	71.3	17.2	17.8	6.6	8.0
R_1836	397271	6954340	8.7	99.7	17.2	17.8	6.5	7.9
R_1837	397273	6954788	9.3	90.3	17.2	18.0	6.6	8.1
R_1838	397273	6957280	9.6	71.5	17.2	17.8	6.6	8.0
R_1839	397274	6954150	8.6	89.1	17.1	17.7	6.5	7.9
R_1840	397275	6954900	9.5	88.7	17.2	18.0	6.6	8.1
R_1841	397276	6954390	8.8	100.0	17.2	17.8	6.5	7.9
R_1842	397278	6954030	8.5	77.2	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1843	397279	6954877	9.4	87.8	17.2	18.0	6.6	8.1
R_1844	397280	6953950	8.5	69.3	17.1	17.7	6.5	7.9
R_1845	397280	6954840	9.4	86.5	17.2	18.0	6.6	8.1
R_1846	397281	6954200	8.6	93.8	17.1	17.7	6.5	7.9
R_1847	397281	6954270	8.7	99.3	17.1	17.7	6.5	7.9
R_1848	397285	6954080	8.6	81.9	17.1	17.7	6.5	7.9
R_1849	397290	6957360	9.6	71.4	17.2	17.8	6.6	8.0
R_1850	397290	6955031	9.9	92.1	17.2	18.1	6.6	8.2
R_1851	397291	6955102	10.2	91.2	17.2	18.2	6.6	8.3
R_1852	397291	6954929	9.6	89.8	17.2	18.0	6.6	8.1
R_1853	397292	6954456	8.9	100.3	17.2	17.8	6.5	8.0
R_1854	397292	6954390	8.8	100.1	17.2	17.8	6.5	7.9
R_1855	397293	6954340	8.7	99.9	17.2	17.8	6.5	7.9
R_1856	397295	6954150	8.6	88.7	17.1	17.7	6.5	7.9
R_1857	397298	6953950	8.5	68.4	17.1	17.7	6.5	7.9
R_1858	397298	6954030	8.5	76.3	17.1	17.7	6.5	7.9
R_1859	397298	6954987	9.7	91.6	17.2	18.0	6.6	8.1
R_1860	397299	6954270	8.7	99.4	17.1	17.7	6.5	7.9
R_1861	397299	6957280	9.6	71.6	17.2	17.8	6.6	8.0
R_1862	397301	6954200	8.6	93.6	17.1	17.7	6.5	7.9
R_1863	397305	6954080	8.6	81.1	17.1	17.7	6.5	7.9
R_1864	397305	6954958	9.7	90.9	17.2	18.0	6.6	8.1
R_1865	397310	6954390	8.8	100.2	17.2	17.8	6.5	7.9
R_1866	397310	6957190	9.7	71.8	17.2	17.9	6.6	8.1
R_1867	397310	6955079	10.1	92.5	17.2	18.2	6.6	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1868	397314	6957150	9.7	71.9	17.2	17.9	6.6	8.1
R_1869	397315	6953800	8.4	63.4	17.1	17.6	6.5	7.8
R_1870	397315	6954150	8.6	88.1	17.1	17.7	6.5	7.9
R_1871	397316	6957350	9.6	71.5	17.2	17.8	6.6	8.0
R_1872	397318	6954270	8.7	99.4	17.1	17.7	6.5	7.9
R_1873	397319	6954030	8.5	75.2	17.1	17.7	6.5	7.9
R_1874	397320	6953950	8.5	67.2	17.1	17.7	6.5	7.9
R_1875	397321	6954330	8.7	99.9	17.2	17.8	6.5	7.9
R_1876	397322	6954190	8.6	92.1	17.1	17.7	6.5	7.9
R_1877	397326	6954080	8.6	80.1	17.1	17.7	6.5	7.9
R_1878	397327	6957280	9.7	71.7	17.2	17.9	6.6	8.0
R_1879	397331	6954440	8.8	100.6	17.2	17.8	6.5	7.9
R_1880	397332	6954420	8.8	100.5	17.2	17.8	6.5	7.9
R_1881	397332	6954390	8.8	100.4	17.2	17.8	6.5	7.9
R_1882	397333	6957400	9.7	71.5	17.2	17.8	6.6	8.0
R_1883	397335	6957110	9.8	72.1	17.2	17.9	6.6	8.1
R_1884	397336	6954140	8.6	86.2	17.1	17.7	6.5	7.9
R_1885	397337	6954260	8.7	99.0	17.1	17.7	6.5	7.9
R_1886	397337	6955063	10.0	95.5	17.2	18.1	6.6	8.2
R_1887	397340	6954020	8.5	73.0	17.1	17.7	6.5	7.9
R_1888	397341	6953950	8.5	66.0	17.1	17.7	6.5	7.9
R_1889	397342	6957350	9.7	71.6	17.2	17.8	6.6	8.0
R_1890	397343	6954190	8.6	91.5	17.1	17.7	6.5	7.9
R_1891	397345	6954340	8.7	100.1	17.2	17.8	6.5	7.9
R_1892	397347	6957080	9.8	72.2	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1893	397349	6954070	8.5	77.8	17.1	17.7	6.5	7.9
R_1894	397353	6957210	9.7	71.9	17.2	17.9	6.6	8.1
R_1895	397353	6954980	9.7	92.1	17.2	18.1	6.6	8.2
R_1896	397353	6954380	8.8	100.4	17.2	17.8	6.5	7.9
R_1897	397354	6954250	8.7	97.7	17.1	17.7	6.5	7.9
R_1898	397356	6957380	9.7	71.6	17.2	17.8	6.6	8.0
R_1899	397357	6954070	8.5	77.4	17.1	17.7	6.5	7.9
R_1900	397357	6954140	8.6	85.3	17.1	17.7	6.5	7.9
R_1901	397359	6954340	8.7	100.1	17.2	17.8	6.5	7.9
R_1902	397360	6957040	9.9	72.5	17.2	18.0	6.6	8.2
R_1903	397360	6957270	9.7	71.8	17.2	17.9	6.6	8.1
R_1904	397361	6953940	8.5	63.8	17.1	17.7	6.5	7.9
R_1905	397361	6954020	8.5	71.8	17.1	17.7	6.5	7.9
R_1906	397364	6954190	8.6	90.6	17.1	17.7	6.5	7.9
R_1907	397364	6955043	9.9	102.5	17.2	18.1	6.6	8.2
R_1908	397370	6954300	8.7	99.7	17.1	17.7	6.5	7.9
R_1909	397371	6957340	9.7	71.8	17.2	17.8	6.6	8.0
R_1910	397374	6954130	8.6	83.2	17.1	17.7	6.5	7.9
R_1911	397375	6954240	8.7	96.0	17.1	17.7	6.5	7.9
R_1912	397379	6954310	8.7	99.8	17.1	17.7	6.5	7.9
R_1913	397381	6954020	8.5	70.5	17.1	17.7	6.5	7.9
R_1914	397384	6954560	9.0	101.4	17.2	17.9	6.5	8.0
R_1915	397385	6953940	8.5	62.3	17.1	17.7	6.5	7.9
R_1916	397386	6957210	9.7	72.1	17.2	17.9	6.6	8.1
R_1917	397387	6957280	9.7	71.9	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1918	397388	6954070	8.5	75.4	17.1	17.7	6.5	7.9
R_1919	397390	6954428	8.8	100.9	17.2	17.8	6.5	7.9
R_1920	397390	6954150	8.6	84.6	17.1	17.7	6.5	7.9
R_1921	397393	6954170	8.6	86.8	17.1	17.7	6.5	7.9
R_1922	397393	6957360	9.7	71.8	17.2	17.8	6.6	8.0
R_1923	397395	6954130	8.6	81.9	17.1	17.7	6.5	7.9
R_1924	397396	6955015	9.8	101.5	17.2	18.1	6.6	8.2
R_1925	397396	6954190	8.6	89.0	17.1	17.7	6.5	7.9
R_1926	397396	6954240	8.6	95.1	17.1	17.7	6.5	7.9
R_1927	397401	6954390	8.8	100.6	17.2	17.8	6.5	7.9
R_1928	397402	6956970	10.1	74.3	17.2	18.1	6.6	8.3
R_1929	397402	6957170	9.8	72.2	17.2	17.9	6.6	8.1
R_1930	397403	6957000	10.0	73.5	17.2	18.0	6.6	8.2
R_1931	397403	6957140	9.8	72.3	17.2	17.9	6.6	8.1
R_1932	397405	6953940	8.5	61.1	17.1	17.7	6.5	7.9
R_1933	397410	6954370	8.8	100.4	17.2	17.8	6.5	7.9
R_1934	397410	6957030	10.0	72.9	17.2	18.0	6.6	8.2
R_1935	397411	6957110	9.9	72.4	17.2	17.9	6.6	8.1
R_1936	397412	6956940	10.2	74.7	17.2	18.2	6.6	8.3
R_1937	397420	6957300	9.8	72.0	17.2	17.9	6.6	8.1
R_1938	397423	6957270	9.8	72.1	17.2	17.9	6.6	8.1
R_1939	397427	6954350	8.7	100.2	17.2	17.8	6.5	7.9
R_1940	397428	6953940	8.5	61.0	17.1	17.7	6.5	7.8
R_1941	397429	6954340	8.7	100.0	17.2	17.8	6.5	7.9
R_1942	397429	6957250	9.8	72.2	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1943	397430	6956910	10.4	77.1	17.2	18.2	6.6	8.4
R_1944	397430	6957400	9.8	71.9	17.2	17.8	6.6	8.0
R_1945	397433	6954020	8.5	67.0	17.1	17.7	6.5	7.9
R_1946	397433	6954010	8.5	65.9	17.1	17.7	6.5	7.9
R_1947	397436	6957080	9.9	73.1	17.2	18.0	6.6	8.2
R_1948	397436	6957220	9.8	72.3	17.2	17.9	6.6	8.1
R_1949	397438	6954310	8.7	99.6	17.1	17.7	6.5	7.9
R_1950	397438	6954050	8.5	69.7	17.1	17.7	6.5	7.9
R_1951	397441	6954300	8.7	99.5	17.1	17.7	6.5	7.9
R_1952	397441	6954070	8.5	71.7	17.1	17.7	6.5	7.9
R_1953	397443	6957200	9.8	72.4	17.2	17.9	6.6	8.1
R_1954	397444	6954280	8.7	97.8	17.1	17.7	6.5	7.9
R_1955	397444	6954260	8.7	95.1	17.1	17.7	6.5	7.9
R_1956	397444	6954240	8.6	92.5	17.1	17.7	6.5	7.9
R_1957	397444	6954230	8.6	91.1	17.1	17.7	6.5	7.9
R_1958	397446	6953940	8.5	61.0	17.1	17.7	6.5	7.8
R_1959	397450	6954130	8.6	77.9	17.1	17.7	6.5	7.9
R_1960	397450	6957180	9.8	72.4	17.2	17.9	6.6	8.1
R_1961	397450	6957380	9.8	72.0	17.2	17.9	6.6	8.1
R_1962	397453	6954160	8.6	81.3	17.1	17.7	6.5	7.9
R_1963	397453	6957150	9.9	72.5	17.2	17.9	6.6	8.1
R_1964	397456	6954180	8.6	83.6	17.1	17.7	6.5	7.9
R_1965	397464	6956910	10.4	79.3	17.2	18.3	6.6	8.4
R_1966	397464	6954010	8.5	63.7	17.1	17.7	6.5	7.9
R_1967	397465	6957120	9.9	73.2	17.2	18.0	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1968	397468	6957360	9.9	72.1	17.2	17.9	6.6	8.1
R_1969	397471	6953940	8.5	61.0	17.1	17.7	6.5	7.8
R_1970	397471	6954050	8.5	67.2	17.1	17.7	6.5	7.9
R_1971	397479	6957330	9.9	72.2	17.2	17.9	6.6	8.1
R_1972	397484	6954000	8.5	61.5	17.1	17.7	6.5	7.9
R_1973	397484	6957040	10.1	75.0	17.2	18.0	6.6	8.2
R_1974	397486	6957020	10.1	75.2	17.2	18.1	6.6	8.3
R_1975	397489	6956990	10.2	75.6	17.2	18.1	6.6	8.3
R_1976	397490	6953940	8.5	61.0	17.1	17.7	6.5	7.8
R_1977	397491	6954050	8.5	65.7	17.1	17.7	6.5	7.9
R_1978	397492	6957430	9.9	72.1	17.2	17.9	6.6	8.1
R_1979	397494	6954140	8.6	75.5	17.1	17.7	6.5	7.9
R_1980	397494	6957290	9.9	72.4	17.2	17.9	6.6	8.1
R_1981	397497	6956890	10.6	81.5	17.2	18.3	6.6	8.5
R_1982	397497	6957070	10.0	74.8	17.2	18.0	6.6	8.2
R_1983	397499	6957270	9.9	72.5	17.2	17.9	6.6	8.1
R_1984	397499	6957400	9.9	72.2	17.2	17.9	6.6	8.1
R_1985	397503	6954000	8.5	61.5	17.1	17.7	6.5	7.9
R_1986	397506	6957240	9.9	72.6	17.2	17.9	6.6	8.1
R_1987	397508	6956970	10.3	76.0	17.2	18.2	6.6	8.3
R_1988	397508	6957360	9.9	72.3	17.2	17.9	6.6	8.1
R_1989	397509	6953930	8.4	61.0	17.1	17.7	6.5	7.8
R_1990	397510	6957440	9.9	72.1	17.2	17.9	6.6	8.1
R_1991	397512	6954050	8.5	64.1	17.1	17.7	6.5	7.9
R_1992	397513	6957220	9.9	72.7	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_1993	397520	6957100	10.0	74.7	17.2	18.0	6.6	8.2
R_1994	397520	6957200	9.9	72.7	17.2	17.9	6.6	8.1
R_1995	397523	6956830	10.9	96.1	17.2	18.5	6.6	8.7
R_1996	397523	6956940	10.4	78.8	17.2	18.2	6.6	8.4
R_1997	397525	6954000	8.5	61.5	17.1	17.7	6.5	7.9
R_1998	397529	6957170	10.0	72.9	17.2	18.0	6.6	8.1
R_1999	397533	6953930	8.4	61.0	17.1	17.7	6.5	7.8
R_2000	397533	6954040	8.5	63.7	17.1	17.7	6.5	7.9
R_2001	397534	6957370	10.0	72.4	17.2	17.9	6.6	8.1
R_2002	397535	6957290	9.9	72.6	17.2	17.9	6.6	8.1
R_2003	397536	6954140	8.6	71.7	17.1	17.7	6.5	7.9
R_2004	397539	6957060	10.1	75.3	17.2	18.0	6.6	8.2
R_2005	397540	6956900	10.6	83.8	17.2	18.3	6.6	8.5
R_2006	397543	6956790	11.3	108.3	17.2	18.7	6.6	8.9
R_2007	397547	6953990	8.5	61.5	17.1	17.7	6.5	7.9
R_2008	397548	6957030	10.2	75.8	17.2	18.1	6.6	8.3
R_2009	397549	6957150	10.0	74.3	17.2	18.0	6.6	8.2
R_2010	397554	6954040	8.5	64.6	17.1	17.7	6.5	7.9
R_2011	397555	6953920	8.4	60.9	17.1	17.7	6.5	7.8
R_2012	397555	6953920	8.4	60.9	17.1	17.7	6.5	7.8
R_2013	397559	6957010	10.3	76.1	17.2	18.1	6.6	8.3
R_2014	397562	6956860	10.9	90.6	17.2	18.5	6.6	8.6
R_2015	397563	6957290	10.0	72.9	17.2	17.9	6.6	8.1
R_2016	397567	6956770	11.5	115.5	17.2	18.8	6.6	9.0
R_2017	397567	6957370	10.0	72.6	17.2	17.9	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2018	397567	6957410	10.1	72.4	17.2	17.9	6.6	8.1
R_2019	397568	6953990	8.5	61.5	17.1	17.7	6.5	7.8
R_2020	397569	6957120	10.1	74.7	17.2	18.0	6.6	8.2
R_2021	397571	6957220	10.0	73.3	17.2	18.0	6.6	8.1
R_2022	397572	6956980	10.4	76.9	17.2	18.2	6.6	8.4
R_2023	397575	6954040	8.5	65.2	17.1	17.7	6.5	7.9
R_2024	397576	6953920	8.4	60.9	17.1	17.7	6.5	7.8
R_2025	397579	6954130	8.6	66.7	17.1	17.7	6.5	7.9
R_2026	397585	6956950	10.5	80.9	17.2	18.2	6.6	8.4
R_2027	397589	6953990	8.5	61.5	17.1	17.7	6.5	7.8
R_2028	397591	6957170	10.1	74.2	17.2	18.0	6.6	8.2
R_2029	397592	6956700	12.2	131.9	17.3	19.1	6.6	9.3
R_2030	397592	6956745	11.8	124.4	17.2	18.9	6.6	9.1
R_2031	397593	6957300	10.1	73.2	17.2	17.9	6.6	8.1
R_2032	397595	6957380	10.1	72.9	17.2	17.9	6.6	8.1
R_2033	397597	6953920	8.4	60.9	17.1	17.7	6.5	7.8
R_2034	397601	6956840	11.1	100.7	17.2	18.5	6.6	8.7
R_2035	397603	6957240	10.1	73.6	17.2	18.0	6.6	8.2
R_2036	397606	6954030	8.5	64.0	17.1	17.7	6.5	7.9
R_2037	397606	6957140	10.2	74.6	17.2	18.0	6.6	8.2
R_2038	397610	6956930	10.7	84.0	17.2	18.3	6.6	8.5
R_2039	397610	6953980	8.5	61.4	17.1	17.7	6.5	7.8
R_2040	397610	6954130	8.6	66.5	17.1	17.7	6.5	7.9
R_2041	397611	6957090	10.2	75.2	17.2	18.1	6.6	8.2
R_2042	397618	6954020	8.5	62.4	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2043	397618	6953910	8.4	60.9	17.1	17.7	6.5	7.8
R_2044	397618	6957390	10.2	73.1	17.2	17.9	6.6	8.1
R_2045	397618	6956678	12.6	133.1	17.3	19.2	6.7	9.4
R_2046	397622	6957300	10.1	73.6	17.2	18.0	6.6	8.1
R_2047	397623	6957060	10.3	75.7	17.2	18.1	6.6	8.3
R_2048	397627	6956905	10.8	85.4	17.2	18.4	6.6	8.6
R_2049	397630	6953980	8.5	61.4	17.1	17.7	6.5	7.8
R_2050	397630	6956736	12.0	128.4	17.3	18.9	6.6	9.1
R_2051	397631	6954130	8.6	66.5	17.1	17.7	6.5	7.9
R_2052	397637	6954030	8.5	62.9	17.1	17.7	6.5	7.9
R_2053	397639	6953910	8.4	60.9	17.1	17.6	6.5	7.8
R_2054	397639	6957040	10.4	75.9	17.2	18.1	6.6	8.3
R_2055	397641	6956880	11.0	95.4	17.2	18.4	6.6	8.6
R_2056	397644	6957390	10.2	73.3	17.2	17.9	6.6	8.1
R_2057	397645	6954460	8.8	100.3	17.2	17.8	6.5	7.9
R_2058	397647	6956637	13.4	135.9	17.3	19.5	6.7	9.7
R_2059	397648	6957300	10.2	73.9	17.2	18.0	6.6	8.2
R_2060	397650	6956770	11.8	115.8	17.2	18.8	6.6	9.0
R_2061	397651	6953980	8.5	61.4	17.1	17.7	6.5	7.8
R_2062	397652	6957090	10.4	75.3	17.2	18.1	6.6	8.3
R_2063	397652	6956850	11.2	106.8	17.2	18.5	6.6	8.7
R_2064	397652	6957020	10.5	77.2	17.2	18.2	6.6	8.3
R_2065	397655	6957230	10.2	74.4	17.2	18.0	6.6	8.2
R_2066	397655	6956696	12.6	131.9	17.3	19.1	6.7	9.3
R_2067	397658	6954030	8.5	61.8	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2068	397659	6953840	8.4	60.4	17.1	17.6	6.5	7.8
R_2069	397659	6953910	8.4	60.9	17.1	17.6	6.5	7.8
R_2070	397662	6956817	11.5	113.2	17.2	18.7	6.6	8.8
R_2071	397662	6954130	8.5	66.4	17.1	17.7	6.5	7.9
R_2072	397663	6956990	10.6	80.4	17.2	18.2	6.6	8.4
R_2073	397672	6953980	8.5	61.4	17.1	17.7	6.5	7.8
R_2074	397673	6956925	10.9	87.3	17.2	18.4	6.6	8.5
R_2075	397673	6957300	10.2	74.2	17.2	18.0	6.6	8.2
R_2076	397674	6956719	12.4	130.7	17.3	19.0	6.7	9.2
R_2077	397678	6953910	8.4	60.9	17.1	17.6	6.5	7.8
R_2078	397679	6957380	10.3	73.8	17.2	18.0	6.6	8.2
R_2079	397680	6957200	10.3	74.9	17.2	18.0	6.6	8.2
R_2080	397685	6957110	10.4	77.3	17.2	18.1	6.6	8.3
R_2081	397686	6956980	10.8	83.5	17.2	18.2	6.6	8.4
R_2082	397688	6957400	10.3	73.7	17.2	18.0	6.6	8.2
R_2083	397689	6954020	8.5	61.8	17.1	17.7	6.5	7.8
R_2084	397690	6956900	11.1	96.9	17.2	18.4	6.6	8.6
R_2085	397690	6956741	12.3	125.2	17.3	19.0	6.6	9.1
R_2086	397691	6957170	10.4	75.2	17.2	18.1	6.6	8.2
R_2087	397692	6953970	8.4	61.4	17.1	17.7	6.5	7.8
R_2088	397695	6957140	10.4	76.6	17.2	18.1	6.6	8.3
R_2089	397695	6956758	12.2	118.9	17.3	18.9	6.6	9.1
R_2090	397697	6957300	10.3	74.5	17.2	18.0	6.6	8.2
R_2091	397698	6953900	8.4	60.8	17.1	17.6	6.5	7.8
R_2092	397704	6954120	8.5	65.9	17.1	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2093	397705	6956787	11.9	114.7	17.2	18.8	6.6	9.0
R_2094	397710	6956990	10.8	84.6	17.2	18.3	6.6	8.4
R_2095	397712	6957313	10.4	74.5	17.2	18.0	6.6	8.2
R_2096	397713	6953970	8.4	61.4	17.1	17.7	6.5	7.8
R_2097	397720	6954020	8.5	61.8	17.1	17.7	6.5	7.8
R_2098	397721	6953900	8.4	60.8	17.1	17.6	6.5	7.8
R_2099	397722	6956810	11.9	114.2	17.2	18.8	6.6	8.9
R_2100	397724	6957380	10.4	74.2	17.2	18.0	6.6	8.2
R_2101	397726	6956840	11.7	113.3	17.2	18.7	6.6	8.8
R_2102	397728	6956900	11.3	101.8	17.2	18.5	6.6	8.7
R_2103	397731	6953960	8.4	61.3	17.1	17.7	6.5	7.8
R_2104	397739	6954080	8.5	62.4	17.1	17.7	6.5	7.9
R_2105	397739	6953670	8.3	59.7	17.1	17.6	6.5	7.8
R_2106	397740	6956936	11.2	94.2	17.2	18.4	6.6	8.6
R_2107	397741	6954010	8.5	61.7	17.1	17.7	6.5	7.8
R_2108	397741	6957293	10.4	75.0	17.2	18.0	6.6	8.2
R_2109	397742	6953900	8.4	60.8	17.1	17.6	6.5	7.8
R_2110	397750	6957370	10.5	74.5	17.2	18.0	6.6	8.2
R_2111	397751	6956854	11.7	113.0	17.2	18.7	6.6	8.9
R_2112	397754	6953960	8.4	61.3	17.1	17.7	6.5	7.8
R_2113	397761	6954010	8.5	61.8	17.1	17.7	6.5	7.8
R_2114	397762	6957010	11.0	85.7	17.2	18.3	6.6	8.5
R_2115	397765	6956874	11.7	112.5	17.2	18.6	6.6	8.8
R_2116	397771	6957281	10.5	75.4	17.2	18.1	6.6	8.2
R_2117	397775	6953900	8.4	60.8	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2118	397775	6953960	8.4	61.3	17.1	17.7	6.5	7.8
R_2119	397777	6957360	10.5	74.9	17.2	18.0	6.6	8.2
R_2120	397782	6954010	8.4	61.8	17.1	17.7	6.5	7.8
R_2121	397783	6956900	11.7	105.7	17.2	18.6	6.6	8.8
R_2122	397786	6954070	8.5	62.3	17.1	17.7	6.5	7.8
R_2123	397796	6957290	10.6	75.6	17.2	18.1	6.6	8.3
R_2124	397803	6954010	8.4	61.8	17.1	17.7	6.5	7.8
R_2125	397803	6957320	10.6	75.4	17.2	18.1	6.6	8.3
R_2126	397806	6953960	8.4	61.4	17.1	17.6	6.5	7.8
R_2127	397808	6957350	10.6	75.2	17.2	18.1	6.6	8.2
R_2128	397817	6953890	8.4	60.8	17.1	17.6	6.5	7.8
R_2129	397822	6954060	8.5	62.3	17.1	17.7	6.5	7.8
R_2130	397824	6954000	8.4	61.7	17.1	17.7	6.5	7.8
R_2131	397846	6957310	10.8	77.9	17.2	18.1	6.6	8.3
R_2132	397847	6953950	8.4	61.3	17.1	17.6	6.5	7.8
R_2133	397852	6953880	8.4	60.7	17.1	17.6	6.5	7.8
R_2134	397854	6954000	8.4	61.7	17.1	17.7	6.5	7.8
R_2135	397864	6954060	8.5	62.3	17.1	17.7	6.5	7.8
R_2136	397869	6954143	8.5	63.1	17.1	17.7	6.5	7.9
R_2137	397880	6953950	8.4	61.3	17.1	17.6	6.5	7.8
R_2138	397891	6956070	10.1	83.8	17.2	18.1	6.6	8.2
R_2139	397902	6953880	8.4	60.8	17.1	17.6	6.5	7.8
R_2140	397905	6953510	8.3	59.3	17.1	17.6	6.5	7.8
R_2141	397905	6953990	8.4	61.7	17.1	17.6	6.5	7.8
R_2142	397908	6953530	8.3	59.3	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2143	397908	6954140	8.5	63.1	17.1	17.7	6.5	7.8
R_2144	397910	6953940	8.4	61.3	17.1	17.6	6.5	7.8
R_2145	397911	6953550	8.3	59.3	17.1	17.6	6.5	7.8
R_2146	397916	6953580	8.3	59.3	17.1	17.6	6.5	7.8
R_2147	397919	6953600	8.3	59.3	17.1	17.6	6.5	7.8
R_2148	397921	6953640	8.3	59.4	17.1	17.6	6.5	7.8
R_2149	397921	6954090	8.5	62.6	17.1	17.7	6.5	7.8
R_2150	397924	6953620	8.3	59.4	17.1	17.6	6.5	7.8
R_2151	397925	6954050	8.4	62.2	17.1	17.7	6.5	7.8
R_2152	397928	6953660	8.3	59.4	17.1	17.6	6.5	7.8
R_2153	397930	6953680	8.3	59.4	17.1	17.6	6.5	7.8
R_2154	397933	6953700	8.3	59.5	17.1	17.6	6.5	7.8
R_2155	397934	6953720	8.3	59.6	17.1	17.6	6.5	7.8
R_2156	397935	6953740	8.3	59.8	17.1	17.6	6.5	7.8
R_2157	397935	6953760	8.3	59.9	17.1	17.6	6.5	7.8
R_2158	397940	6953810	8.3	60.3	17.1	17.6	6.5	7.8
R_2159	397943	6953780	8.3	60.0	17.1	17.6	6.5	7.8
R_2160	397944	6953500	8.2	59.3	17.1	17.6	6.5	7.8
R_2161	397947	6953520	8.3	59.3	17.1	17.6	6.5	7.8
R_2162	397947	6953860	8.4	60.6	17.1	17.6	6.5	7.8
R_2163	397949	6953540	8.3	59.3	17.1	17.6	6.5	7.8
R_2164	397951	6953510	8.2	59.3	17.1	17.6	6.5	7.8
R_2165	397955	6953570	8.3	59.3	17.1	17.6	6.5	7.8
R_2166	397957	6953760	8.3	59.9	17.1	17.6	6.5	7.8
R_2167	397958	6953590	8.3	59.3	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2168	397959	6953910	8.4	61.0	17.1	17.6	6.5	7.8
R_2169	397960	6953890	8.4	60.9	17.1	17.6	6.5	7.8
R_2170	397961	6953610	8.3	59.3	17.1	17.6	6.5	7.8
R_2171	397963	6953740	8.3	59.8	17.1	17.6	6.5	7.8
R_2172	397965	6953650	8.3	59.3	17.1	17.6	6.5	7.8
R_2173	397966	6953860	8.3	60.7	17.1	17.6	6.5	7.8
R_2174	397967	6953630	8.3	59.3	17.1	17.6	6.5	7.8
R_2175	397968	6953720	8.3	59.6	17.1	17.6	6.5	7.8
R_2176	397970	6953680	8.3	59.4	17.1	17.6	6.5	7.8
R_2177	397971	6953970	8.4	61.6	17.1	17.6	6.5	7.8
R_2178	397975	6953700	8.3	59.5	17.1	17.6	6.5	7.8
R_2179	397976	6953924	8.4	61.2	17.1	17.6	6.5	7.8
R_2180	397979	6953810	8.3	60.3	17.1	17.6	6.5	7.8
R_2181	397979	6953970	8.4	61.6	17.1	17.6	6.5	7.8
R_2182	397981	6953800	8.3	60.2	17.1	17.6	6.5	7.8
R_2183	397985	6953870	8.3	60.7	17.1	17.6	6.5	7.8
R_2184	397986	6954051	8.4	62.3	17.1	17.7	6.5	7.8
R_2185	397990	6953780	8.3	60.1	17.1	17.6	6.5	7.8
R_2186	397993	6953510	8.2	59.2	17.1	17.6	6.5	7.8
R_2187	397998	6953770	8.3	60.0	17.1	17.6	6.5	7.8
R_2188	397999	6953970	8.4	61.6	17.1	17.6	6.5	7.8
R_2189	397999	6953922	8.4	61.2	17.1	17.6	6.5	7.8
R_2190	398001	6953880	8.4	60.8	17.1	17.6	6.5	7.8
R_2191	398002	6953530	8.2	59.2	17.1	17.6	6.5	7.8
R_2192	398003	6953830	8.3	60.4	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2193	398006	6953750	8.3	59.9	17.1	17.6	6.5	7.8
R_2194	398007	6953570	8.3	59.2	17.1	17.6	6.5	7.8
R_2195	398007	6953830	8.3	60.4	17.1	17.6	6.5	7.8
R_2196	398010	6953590	8.3	59.2	17.1	17.6	6.5	7.8
R_2197	398013	6953600	8.3	59.2	17.1	17.6	6.5	7.8
R_2198	398013	6953730	8.3	59.7	17.1	17.6	6.5	7.8
R_2199	398016	6953620	8.3	59.2	17.1	17.6	6.5	7.8
R_2200	398018	6953510	8.2	59.2	17.1	17.6	6.5	7.8
R_2201	398019	6953800	8.3	60.2	17.1	17.6	6.5	7.8
R_2202	398020	6953710	8.3	59.6	17.1	17.6	6.5	7.8
R_2203	398021	6953650	8.3	59.2	17.1	17.6	6.5	7.8
R_2204	398021	6953670	8.3	59.3	17.1	17.6	6.5	7.8
R_2205	398021	6953910	8.4	61.1	17.1	17.6	6.5	7.8
R_2206	398022	6953690	8.3	59.4	17.1	17.6	6.5	7.8
R_2207	398026	6953780	8.3	60.1	17.1	17.6	6.5	7.8
R_2208	398026	6953880	8.3	60.8	17.1	17.6	6.5	7.8
R_2209	398028	6953970	8.4	61.6	17.1	17.6	6.5	7.8
R_2210	398034	6953760	8.3	59.9	17.1	17.6	6.5	7.8
R_2211	398036	6953520	8.2	59.1	17.1	17.6	6.5	7.8
R_2212	398040	6953910	8.4	61.1	17.1	17.6	6.5	7.8
R_2213	398041	6953740	8.3	59.8	17.1	17.6	6.5	7.8
R_2214	398042	6953870	8.3	60.8	17.1	17.6	6.5	7.8
R_2215	398045	6953560	8.3	59.1	17.1	17.6	6.5	7.8
R_2216	398047	6953850	8.3	60.6	17.1	17.6	6.5	7.8
R_2217	398048	6953580	8.3	59.1	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2218	398049	6953720	8.3	59.7	17.1	17.6	6.5	7.8
R_2219	398050	6953510	8.2	59.1	17.1	17.6	6.5	7.8
R_2220	398050	6953590	8.3	59.1	17.1	17.6	6.5	7.8
R_2221	398053	6953610	8.3	59.2	17.1	17.6	6.5	7.8
R_2222	398054	6953700	8.3	59.5	17.1	17.6	6.5	7.8
R_2223	398055	6953630	8.3	59.2	17.1	17.6	6.5	7.8
R_2224	398056	6954010	8.4	62.0	17.1	17.6	6.5	7.8
R_2225	398057	6953820	8.3	60.4	17.1	17.6	6.5	7.8
R_2226	398058	6953650	8.3	59.2	17.1	17.6	6.5	7.8
R_2227	398060	6953680	8.3	59.4	17.1	17.6	6.5	7.8
R_2228	398060	6953910	8.4	61.1	17.1	17.6	6.5	7.8
R_2229	398064	6953660	8.3	59.3	17.1	17.6	6.5	7.8
R_2230	398065	6953890	8.3	60.9	17.1	17.6	6.5	7.8
R_2231	398069	6953960	8.4	61.6	17.1	17.6	6.5	7.8
R_2232	398073	6953870	8.3	60.8	17.1	17.6	6.5	7.8
R_2233	398074	6953780	8.3	60.1	17.1	17.6	6.5	7.8
R_2234	398080	6953770	8.3	60.0	17.1	17.6	6.5	7.8
R_2235	398080	6953850	8.3	60.6	17.1	17.6	6.5	7.8
R_2236	398081	6953810	8.3	60.3	17.1	17.6	6.5	7.8
R_2237	398085	6953950	8.4	61.5	17.1	17.6	6.5	7.8
R_2238	398087	6953750	8.3	59.9	17.1	17.6	6.5	7.8
R_2239	398087	6953830	8.3	60.5	17.1	17.6	6.5	7.8
R_2240	398094	6953570	8.3	59.1	17.1	17.6	6.5	7.8
R_2241	398095	6953530	8.2	59.1	17.1	17.6	6.5	7.8
R_2242	398096	6953730	8.3	59.7	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2243	398097	6953810	8.3	60.3	17.1	17.6	6.5	7.8
R_2244	398100	6954020	8.4	62.1	17.1	17.6	6.5	7.8
R_2245	398102	6953800	8.3	60.3	17.1	17.6	6.5	7.8
R_2246	398103	6953710	8.3	59.6	17.1	17.6	6.5	7.8
R_2247	398107	6953590	8.3	59.1	17.1	17.6	6.5	7.8
R_2248	398108	6953540	8.2	59.0	17.1	17.6	6.5	7.8
R_2249	398109	6953610	8.3	59.1	17.1	17.6	6.5	7.8
R_2250	398109	6953780	8.3	60.1	17.1	17.6	6.5	7.8
R_2251	398110	6953630	8.3	59.1	17.1	17.6	6.5	7.8
R_2252	398110	6953690	8.3	59.5	17.1	17.6	6.5	7.8
R_2253	398112	6953650	8.3	59.2	17.1	17.6	6.5	7.8
R_2254	398114	6953670	8.3	59.3	17.1	17.6	6.5	7.8
R_2255	398116	6953760	8.3	60.0	17.1	17.6	6.5	7.8
R_2256	398118	6953890	8.3	61.0	17.1	17.6	6.5	7.8
R_2257	398122	6953550	8.2	59.0	17.1	17.6	6.5	7.8
R_2258	398125	6953950	8.4	61.5	17.1	17.6	6.5	7.8
R_2259	398125	6953740	8.3	59.8	17.1	17.6	6.5	7.8
R_2260	398133	6953720	8.3	59.7	17.1	17.6	6.5	7.8
R_2261	398135	6953560	8.2	59.0	17.1	17.6	6.5	7.8
R_2262	398138	6953850	8.3	60.7	17.1	17.6	6.5	7.8
R_2263	398140	6953700	8.3	59.5	17.1	17.6	6.5	7.8
R_2264	398140	6953900	8.3	61.1	17.1	17.6	6.5	7.8
R_2265	398145	6953830	8.3	60.5	17.1	17.6	6.5	7.8
R_2266	398145	6953680	8.3	59.4	17.1	17.6	6.5	7.8
R_2267	398149	6953570	8.2	59.0	17.1	17.6	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2268	398149	6953660	8.3	59.3	17.1	17.6	6.5	7.8
R_2269	398153	6953640	8.3	59.1	17.1	17.6	6.5	7.8
R_2270	398156	6953800	8.3	60.3	17.1	17.6	6.5	7.8
R_2271	398158	6953610	8.3	59.0	17.1	17.6	6.5	7.8
R_2272	398160	6953510	8.2	59.0	17.1	17.6	6.5	7.8
R_2273	398161	6953860	8.3	60.7	17.1	17.6	6.5	7.8
R_2274	398162	6953580	8.3	59.0	17.1	17.6	6.5	7.8
R_2275	398164	6953510	8.2	58.9	17.1	17.6	6.5	7.8
R_2276	398166	6953900	8.3	61.1	17.1	17.6	6.5	7.8
R_2277	398169	6953770	8.3	60.1	17.1	17.6	6.5	7.8
R_2278	398177	6953520	8.2	58.9	17.1	17.6	6.5	7.8
R_2279	398177	6953600	8.3	59.0	17.1	17.6	6.5	7.8
R_2280	398178	6953870	8.3	60.8	17.1	17.6	6.5	7.8
R_2281	398181	6953720	8.3	59.7	17.1	17.6	6.5	7.8
R_2282	398182	6953820	8.3	60.4	17.1	17.6	6.5	7.8
R_2283	398186	6953580	8.2	58.9	17.1	17.6	6.5	7.8
R_2284	398192	6953780	8.3	60.1	17.1	17.6	6.5	7.8
R_2285	398197	6953540	8.2	58.9	17.1	17.6	6.5	7.8
R_2286	398197	6953690	8.3	59.5	17.1	17.6	6.5	7.8
R_2287	398200	6953510	8.2	58.9	17.1	17.6	6.5	7.8
R_2288	398203	6953750	8.3	59.9	17.1	17.6	6.5	7.8
R_2289	398206	6953510	8.2	58.9	17.1	17.6	6.5	7.8
R_2290	398217	6953710	8.3	59.6	17.1	17.6	6.5	7.8
R_2291	398218	6953960	8.4	61.7	17.1	17.6	6.5	7.8
R_2292	398708	6956215	9.8	98.6	17.2	18.2	6.6	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2293	398740	6955958	10.7	134.4	17.3	18.9	6.6	8.7
R_2294	398844	6953590	8.2	58.5	17.1	17.6	6.5	7.8
R_2295	398854	6953620	8.2	58.7	17.1	17.6	6.5	7.8
R_2296 (within Project footprint)	399153	6956300	9.7	84.3	17.3	18.5	6.6	8.2
R_2297	399373	6956257	9.9	96.2	17.3	18.9	6.6	8.4
R_2298	399502	6956960	10.0	98.9	17.2	18.0	6.6	8.1
R_2299	399660	6955882	13.8	99.0	17.5	19.4	6.7	9.2
R_2300	400183	6955341	9.5	75.9	17.3	18.0	6.6	8.1
R_2301	400619	6953887	8.3	64.3	17.1	17.6	6.5	7.7
R_2302	401181	6954226	8.5	64.7	17.1	17.7	6.5	7.8
R_2303	401229	6954248	8.5	66.0	17.1	17.7	6.5	7.8
R_2304	401314	6956780	11.5	107.6	17.3	18.4	6.6	8.6
R_2305	401370	6954667	8.7	67.8	17.2	17.8	6.5	7.9
R_2306	401487	6955349	9.2	58.2	17.2	17.8	6.6	7.9
R_2307	401495	6956710	10.9	101.1	17.2	18.3	6.6	8.5
R_2308	401565	6954309	8.5	69.5	17.2	17.7	6.5	7.8
R_2309	401596	6954749	8.8	60.9	17.2	17.8	6.5	7.8
R_2310	401635	6954827	8.8	59.7	17.2	17.8	6.5	7.8
R_2311	401643	6954399	8.6	67.0	17.2	17.7	6.5	7.8
R_2312	401750	6954478	8.6	63.4	17.2	17.8	6.5	7.8
R_2313	401774	6954564	8.6	61.5	17.2	17.8	6.5	7.8
R_2314	401815	6954568	8.6	61.0	17.2	17.8	6.5	7.8
R_2315	401828	6954090	8.4	67.3	17.1	17.7	6.5	7.8
R_2316	401831	6954628	8.7	60.3	17.2	17.8	6.5	7.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2317	401885	6954085	8.4	67.1	17.1	17.7	6.5	7.8
R_2318	402132	6953986	8.4	66.4	17.1	17.7	6.5	7.8
R_2319	402360	6954160	8.5	62.6	17.1	17.7	6.5	7.8
R_2320	402396	6957000	17.9	127.7	17.6	20.4	6.9	10.5
R_2321	402505	6956900	21.4	133.3	17.8	21.1	7.1	11.2
R_2322	402528	6954537	8.6	59.4	17.2	17.7	6.5	7.8
R_2323 (within Project footprint)	402600	6956240	10.9	99.8	17.3	18.1	6.6	8.2
R_2324	402644	6958459	8.3	60.1	17.1	17.6	6.5	7.8
R_2325	402660	6958402	8.3	60.1	17.1	17.6	6.5	7.8
R_2326	402836	6958377	8.3	60.0	17.1	17.6	6.5	7.8
R_2327	402861	6955133	9.0	59.8	17.2	17.7	6.5	7.8
R_2328	402981	6958392	8.2	60.0	17.1	17.6	6.5	7.8
R_2329	402991	6958462	8.2	60.0	17.1	17.6	6.5	7.8
R_2330	403016	6958712	8.2	60.0	17.1	17.6	6.5	7.8
R_2331	403033	6958360	8.2	59.9	17.1	17.6	6.5	7.8
R_2332	403168	6958687	8.2	60.0	17.1	17.6	6.5	7.8
R_2333	403208	6954420	8.6	59.0	17.2	17.7	6.5	7.8
R_2334	403225	6957045	10.2	73.1	17.3	18.7	6.6	8.4
R_2335	403452	6958837	8.1	59.9	17.1	17.6	6.5	7.7
R_2336	403484	6955474	10.3	102.6	17.2	18.6	6.6	8.6
R_2337	403509	6957029	10.3	72.4	17.4	18.7	6.6	8.4
R_2338	403691	6956622	10.8	97.6	17.3	18.6	6.6	8.6
R_2339	403744	6955200	9.7	76.3	17.2	18.1	6.6	8.2
R_2340	403760	6955943	16.8	147.3	17.5	20.1	6.9	10.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2341	403888	6954660	8.8	58.0	17.2	17.6	6.5	7.8
R_2342	403888	6954660	8.8	58.0	17.2	17.6	6.5	7.8
R_2343	403907	6955120	9.6	69.8	17.2	18.0	6.6	8.1
R_2344	403912	6956660	10.2	81.2	17.3	18.5	6.6	8.4
R_2345	403954	6956440	11.2	120.5	17.3	18.8	6.6	8.9
R_2346	404010	6956881	10.3	79.8	17.5	18.9	6.6	8.3
R_2347	404097	6955988	21.4	141.8	17.7	20.6	7.0	10.7
R_2348	404453	6955798	11.5	110.4	17.3	18.8	6.6	8.9
R_2349	404608	6957530	9.0	73.3	17.3	18.5	6.6	8.1
R_2350	404658	6956812	9.6	77.3	17.3	18.3	6.6	8.1
R_2351	404680	6955113	10.0	79.0	17.2	18.2	6.6	8.3
R_2352	404931	6954800	9.6	72.1	17.2	17.9	6.6	8.1
R_2353	404991	6955378	10.6	100.0	17.2	18.1	6.6	8.2
R_2354	405023	6955234	10.3	85.2	17.2	17.9	6.6	8.1
R_2355	405062	6955201	10.3	83.4	17.2	17.9	6.6	8.1
R_2356	405094	6957429	9.1	74.5	17.3	18.5	6.6	8.2
R_2357	405126	6957395	9.2	74.7	17.3	18.5	6.6	8.2
R_2358	405187	6957740	8.6	75.9	17.2	18.1	6.5	8.0
R_2359	405268	6954705	9.3	71.8	17.2	17.9	6.6	8.0
R_2360	405287	6954773	9.5	71.5	17.2	17.9	6.6	8.0
R_2361	405416	6955220	10.4	70.5	17.2	18.1	6.6	8.2
R_2362	405472	6954552	9.0	71.8	17.2	17.8	6.5	8.0
R_2363	405634	6955500	10.9	74.3	17.3	18.1	6.6	8.2
R_2364	405637	6954950	9.8	67.9	17.2	17.9	6.6	8.0
R_2365	405768	6954710	9.2	68.9	17.2	17.8	6.6	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2366	405904	6957470	8.7	74.8	17.2	18.2	6.5	8.0
R_2367	405930	6954400	8.8	71.4	17.2	17.7	6.5	7.9
R_2368	405984	6955245	10.4	63.8	17.2	17.9	6.6	8.0
R_2369	406160	6958090	8.2	60.9	17.1	17.7	6.5	7.8
R_2370	406173	6954340	8.7	70.3	17.2	17.7	6.5	7.8
R_2371	406176	6958700	8.1	59.8	17.1	17.6	6.5	7.7
R_2372	406249	6954412	8.9	71.6	17.2	17.8	6.5	7.9
R_2373	406278	6954871	10.1	78.4	17.2	18.0	6.6	8.0
R_2374	406306	6958020	8.2	64.7	17.1	17.7	6.5	7.8
R_2375	406375	6954318	8.8	71.4	17.2	17.8	6.5	7.9
R_2376	406435	6954366	8.9	73.1	17.2	17.8	6.5	7.9
R_2377	406524	6954420	9.1	74.8	17.2	17.9	6.5	8.0
R_2378	406547	6953750	8.6	64.7	17.1	17.7	6.5	7.8
R_2379	406558	6953600	8.6	64.3	17.1	17.7	6.5	7.8
R_2380	406609	6954431	9.2	73.5	17.2	17.9	6.6	8.0
R_2381	406675	6954521	9.5	76.8	17.2	18.0	6.6	8.1
R_2382	406681	6953660	8.7	63.9	17.1	17.7	6.5	7.8
R_2383	406703	6954895	10.8	92.8	17.3	18.2	6.6	8.2
R_2384	406705	6953690	8.7	63.8	17.1	17.7	6.5	7.8
R_2385	406724	6953850	8.7	63.6	17.2	17.7	6.5	7.8
R_2386	406769	6954270	9.1	68.0	17.2	17.9	6.5	8.0
R_2387	406789	6954933	11.1	91.6	17.3	18.2	6.6	8.2
R_2388	406818	6953550	8.7	63.5	17.2	17.7	6.5	7.8
R_2389	406846	6954286	9.2	66.0	17.2	18.0	6.6	8.0
R_2390	406870	6953730	8.8	63.2	17.2	17.7	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2391	406880	6954060	9.0	63.5	17.2	17.8	6.5	7.9
R_2392	406892	6954298	9.3	67.1	17.2	18.0	6.6	8.1
R_2393	406942	6953810	8.9	63.1	17.2	17.8	6.5	7.9
R_2394	406982	6954399	9.6	70.4	17.2	18.1	6.6	8.2
R_2395	406997	6954120	9.1	66.2	17.2	17.9	6.5	8.0
R_2396	407006	6953500	8.8	63.0	17.2	17.7	6.5	7.8
R_2397	407053	6953770	9.0	63.1	17.2	17.8	6.5	7.9
R_2398	407058	6954276	9.5	69.3	17.2	18.1	6.6	8.1
R_2399	407073	6954409	9.8	72.7	17.2	18.2	6.6	8.2
R_2400	407128	6953740	9.0	63.2	17.2	17.8	6.5	7.9
R_2401	407156	6954658	10.9	100.5	17.3	18.7	6.6	8.5
R_2402	407171	6954399	9.9	80.9	17.2	18.3	6.6	8.3
R_2403	407235	6954080	9.4	68.4	17.2	18.0	6.6	8.0
R_2404	407237	6954331	9.9	78.0	17.2	18.2	6.6	8.2
R_2405	407270	6954634	10.9	103.5	17.3	18.8	6.6	8.6
R_2406	407275	6954389	10.1	86.3	17.2	18.3	6.6	8.3
R_2407	407332	6953590	9.2	63.5	17.2	17.8	6.6	7.9
R_2408	407360	6954261	10.0	75.7	17.2	18.3	6.6	8.3
R_2409	407382	6954379	10.3	87.1	17.2	18.5	6.6	8.4
R_2410	407431	6954348	10.3	82.6	17.2	18.5	6.6	8.4
R_2411	407438	6954080	10.0	72.2	17.2	18.1	6.6	8.2
R_2412	407469	6954322	10.4	79.2	17.2	18.5	6.6	8.4
R_2413	407494	6953910	9.9	68.1	17.2	18.1	6.6	8.1
R_2414	407495	6953700	9.6	65.3	17.2	17.9	6.6	8.0
R_2415	407499	6954289	10.4	75.7	17.2	18.4	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2416	407504	6954180	10.3	74.2	17.2	18.3	6.6	8.3
R_2417	407512	6954090	10.2	73.9	17.2	18.2	6.6	8.2
R_2418	407538	6954249	10.5	74.6	17.2	18.4	6.6	8.4
R_2419	407570	6953620	9.6	65.2	17.2	17.9	6.6	8.0
R_2420	407583	6954117	10.5	74.2	17.2	18.3	6.6	8.3
R_2421	407606	6954630	11.4	89.9	17.3	18.7	6.6	8.7
R_2422	407666	6957000	9.0	94.0	17.2	18.2	6.5	8.2
R_2423	407748	6954678	12.4	95.4	17.3	18.8	6.7	8.8
R_2424	407843	6954220	11.9	75.5	17.3	18.4	6.6	8.4
R_2425	407846	6954024	11.5	73.9	17.3	18.3	6.6	8.4
R_2426	407947	6954020	11.8	78.6	17.3	18.4	6.6	8.5
R_2427	407961	6953640	10.1	69.8	17.2	18.1	6.6	8.2
R_2428	408065	6955851	10.4	113.5	17.3	18.6	6.6	8.5
R_2429	408101	6954040	12.6	94.9	17.3	18.7	6.7	8.8
R_2430	408118	6955706	11.5	117.9	17.4	19.3	6.7	9.1
R_2431	408131	6955740	11.1	116.4	17.4	19.0	6.6	8.9
R_2432	408133	6953870	11.1	89.9	17.3	18.5	6.6	8.5
R_2433	408146	6955981	9.8	94.4	17.3	18.3	6.6	8.3
R_2434	408193	6955724	11.2	115.5	17.4	19.1	6.6	8.9
R_2435	408210	6955854	10.3	112.7	17.3	18.6	6.6	8.5
R_2436	408255	6955983	9.9	90.5	17.3	18.4	6.6	8.3
R_2437	408257	6955728	10.9	113.1	17.4	18.9	6.6	8.6
R_2438	408291	6955741	10.8	110.9	17.4	18.8	6.6	8.6
R_2439	408293	6955925	10.1	90.9	17.4	18.5	6.6	8.3
R_2440	408300	6955800	10.3	92.8	17.4	18.5	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2441	408308	6953950	12.8	102.4	17.3	19.1	6.7	9.1
R_2442	408315	6955857	10.1	89.5	17.4	18.4	6.6	8.3
R_2443	408401	6954040	15.4	109.0	17.5	19.8	6.8	9.9
R_2444	408494	6957020	8.8	71.6	17.2	18.1	6.5	8.1
R_2445	408502	6953920	16.5	114.0	17.5	20.6	6.9	10.7
R_2446	408504	6955705	10.6	88.1	17.4	18.7	6.6	8.4
R_2447	408832	6953780	20.2	159.5	17.7	21.9	7.0	12.0
R_2448	408871	6954300	12.7	117.2	17.4	20.1	6.7	10.2
R_2449	408967	6954290	12.0	115.5	17.4	19.6	6.7	9.8
R_2450	408990	6954112	12.1	114.4	17.4	19.6	6.7	9.8
R_2451	408998	6955227	10.9	86.7	17.5	18.8	6.7	8.5
R_2452	409041	6956455	8.9	75.5	17.2	18.3	6.6	8.2
R_2453	409071	6954990	10.4	84.9	17.4	18.5	6.6	8.4
R_2454	409099	6953920	12.3	142.5	17.3	19.5	6.7	9.6
R_2455	409189	6953730	12.6	142.4	17.3	19.3	6.7	9.4
R_2456	409213	6954560	10.3	107.7	17.3	18.5	6.6	8.6
R_2457	409251	6953991	11.4	105.9	17.3	18.9	6.6	9.1
R_2458	409254	6953480	13.2	119.7	17.3	19.2	6.7	9.4
R_2459	409272	6953530	12.7	108.6	17.3	19.1	6.7	9.2
R_2460	409283	6954820	10.1	83.9	17.4	18.6	6.6	8.4
R_2461	409283	6954820	10.1	83.9	17.4	18.6	6.6	8.4
R_2462	409283	6954820	10.1	83.9	17.4	18.6	6.6	8.4
R_2463	409284	6955049	10.7	76.2	17.5	18.7	6.7	8.3
R_2464	409311	6954000	11.2	105.1	17.3	18.8	6.6	8.9
R_2465	409336	6953630	11.7	102.6	17.3	18.7	6.6	8.8

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2466	409362	6954076	10.9	93.1	17.3	18.6	6.6	8.8
R_2467	409391	6954822	10.3	80.5	17.5	18.8	6.6	8.4
R_2468	409416	6956860	8.7	70.7	17.2	18.2	6.5	8.1
R_2469	409417	6956720	8.7	71.8	17.2	18.3	6.5	8.2
R_2470	409420	6953820	10.9	99.6	17.3	18.6	6.6	8.7
R_2471	409442	6953220	12.8	106.8	17.3	18.9	6.7	9.1
R_2472	409467	6953650	11.1	98.3	17.3	18.5	6.6	8.7
R_2473	409502	6954184	10.4	87.3	17.3	18.4	6.6	8.5
R_2474	409509	6955697	9.3	73.1	17.2	18.5	6.6	8.2
R_2475	409512	6954253	10.4	86.8	17.4	18.4	6.6	8.4
R_2476	409513	6954524	10.0	76.5	17.4	18.4	6.6	8.2
R_2477	409514	6954354	10.3	84.0	17.4	18.5	6.6	8.3
R_2478	409518	6954755	10.4	80.5	17.5	19.2	6.7	8.4
R_2479	409550	6953580	10.8	95.9	17.3	18.4	6.6	8.6
R_2480	409560	6954623	9.9	80.4	17.4	18.5	6.6	8.3
R_2481	409570	6956342	9.0	76.1	17.2	18.9	6.6	8.5
R_2482	409572	6953740	10.4	89.8	17.3	18.4	6.6	8.5
R_2483	409576	6956990	8.6	70.1	17.2	18.1	6.5	8.0
R_2484	409584	6954054	10.1	81.2	17.3	18.3	6.6	8.4
R_2485	409586	6953520	10.8	91.8	17.3	18.4	6.6	8.5
R_2486	409593	6957020	8.5	70.0	17.2	18.0	6.5	8.0
R_2487	409600	6954240	10.3	79.6	17.4	18.5	6.6	8.3
R_2488	409603	6954336	10.4	77.8	17.4	18.6	6.6	8.3
R_2489	409607	6953430	10.9	90.6	17.3	18.5	6.6	8.6
R_2490	409608	6957050	8.5	69.9	17.2	18.0	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2491	409616	6954140	10.1	80.4	17.3	18.3	6.6	8.4
R_2492	409633	6954502	10.2	75.9	17.4	18.8	6.6	8.2
R_2493	409643	6953340	11.1	90.7	17.3	18.5	6.6	8.6
R_2494	409666	6954721	10.5	77.2	17.5	19.4	6.7	8.4
R_2495	409675	6953260	11.3	92.6	17.3	18.6	6.6	8.7
R_2496	409680	6954017	9.9	80.9	17.3	18.2	6.6	8.3
R_2497	409717	6953200	11.4	93.2	17.3	18.7	6.6	8.8
R_2498	409723	6954736	10.7	77.5	17.6	19.5	6.7	8.4
R_2499	409727	6954589	10.5	76.4	17.5	19.4	6.7	8.4
R_2500	409761	6953404	10.4	80.8	17.2	18.4	6.6	8.5
R_2501	409772	6953140	11.5	91.3	17.3	18.7	6.6	8.8
R_2502	409792	6953443	10.2	80.6	17.2	18.3	6.6	8.4
R_2503	409814	6953070	11.8	95.5	17.3	18.8	6.6	8.9
R_2504	409821	6953850	9.7	80.4	17.3	18.1	6.6	8.2
R_2505	409832	6953918	9.6	78.4	17.3	18.1	6.6	8.2
R_2506	409873	6952980	12.4	108.2	17.3	19.0	6.7	9.1
R_2507	409890	6953710	9.7	79.6	17.3	18.1	6.6	8.2
R_2508	409900	6956463	8.7	72.1	17.2	18.5	6.5	8.3
R_2509	409918	6956168	8.9	73.0	17.2	18.8	6.6	8.4
R_2510	409929	6953915	9.6	76.0	17.3	18.1	6.6	8.1
R_2511	409968	6953758	9.6	76.3	17.3	18.1	6.6	8.1
R_2512	409979	6953910	9.6	75.7	17.3	18.1	6.6	8.1
R_2513	410006	6953570	9.7	76.9	17.3	18.2	6.6	8.2
R_2514	410030	6953650	9.6	76.4	17.3	18.1	6.6	8.2
R_2515	410031	6953710	9.6	76.2	17.3	18.1	6.6	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2516	410031	6952940	12.4	112.8	17.3	19.0	6.7	9.1
R_2517	410038	6953500	9.7	77.2	17.3	18.2	6.6	8.2
R_2518	410050	6953846	9.6	74.0	17.3	18.1	6.6	8.1
R_2519	410113	6953410	9.8	77.5	17.3	18.3	6.6	8.3
R_2520	410114	6953812	9.7	73.0	17.4	18.2	6.6	8.1
R_2521	410147	6952870	13.2	113.7	17.3	19.2	6.7	9.2
R_2522	410147	6952870	13.2	113.7	17.3	19.2	6.7	9.2
R_2523	410147	6952870	13.2	113.7	17.3	19.2	6.7	9.2
R_2524	410155	6955440	9.1	72.1	17.3	18.5	6.6	8.2
R_2525	410158	6953710	9.7	75.2	17.4	18.2	6.6	8.1
R_2526	410162	6953831	9.7	71.1	17.4	18.3	6.6	8.1
R_2527	410174	6953630	9.7	76.0	17.3	18.2	6.6	8.1
R_2528	410175	6953521	9.7	76.5	17.3	18.2	6.6	8.2
R_2529	410183	6953510	9.7	76.5	17.3	18.2	6.6	8.2
R_2530	410194	6953310	9.9	78.0	17.3	18.4	6.6	8.4
R_2531	410208	6954017	10.3	69.8	17.5	18.9	6.7	8.2
R_2532	410223	6953800	9.9	69.7	17.4	18.4	6.6	8.1
R_2533	410244	6953490	9.7	76.4	17.3	18.3	6.6	8.2
R_2534	410269	6953020	11.4	91.3	17.3	18.8	6.6	8.9
R_2535	410272	6953650	9.8	71.5	17.4	18.4	6.6	8.1
R_2536	410285	6953310	9.9	77.7	17.3	18.4	6.6	8.4
R_2537	410352	6953270	9.9	78.0	17.3	18.5	6.6	8.5
R_2538	410361	6953850	10.6	69.6	17.6	19.0	6.7	8.3
R_2539	410395	6952660	20.8	137.7	17.7	20.7	7.0	10.7
R_2540	410421	6953250	10.0	78.0	17.3	18.6	6.6	8.5

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2541	410470	6953450	9.8	74.8	17.4	18.6	6.6	8.3
R_2542	410492	6953220	10.1	78.3	17.3	18.7	6.6	8.6
R_2543	410613	6953930	10.8	69.8	17.7	19.4	6.7	8.4
R_2544	410663	6953339	9.8	76.2	17.3	18.7	6.6	8.4
R_2545	410800	6953090	10.6	87.3	17.3	18.9	6.6	8.8
R_2546	410805	6952420	14.3	142.3	17.4	20.0	6.8	10.0
R_2547	410843	6952420	14.1	140.9	17.4	19.9	6.7	9.9
R_2548	410857	6952580	23.6	148.5	17.9	22.3	7.3	12.3
R_2549	410867	6952100	9.0	78.6	17.2	18.3	6.5	8.3
R_2550	410867	6952100	9.0	78.6	17.2	18.3	6.5	8.3
R_2551	410878	6952420	13.8	133.8	17.4	19.9	6.7	9.9
R_2552	410879	6952380	12.3	121.2	17.3	19.5	6.7	9.5
R_2553	410880	6952400	13.0	125.8	17.3	19.7	6.7	9.7
R_2554	410880	6952370	12.0	115.8	17.3	19.4	6.7	9.4
R_2555	410881	6952350	11.5	108.7	17.3	19.2	6.6	9.3
R_2556	410881	6952370	12.0	115.8	17.3	19.4	6.7	9.4
R_2557	410881	6952360	11.7	111.6	17.3	19.3	6.7	9.3
R_2558	410881	6952360	11.7	111.6	17.3	19.3	6.7	9.3
R_2559	410882	6952360	11.7	111.5	17.3	19.3	6.7	9.3
R_2560	410885	6952330	11.1	106.2	17.2	19.1	6.6	9.1
R_2561	410888	6952760	15.6	145.9	17.5	20.9	6.8	10.9
R_2562	410897	6953458	9.7	73.9	17.3	18.7	6.6	8.3
R_2563	410900	6952390	12.5	122.4	17.3	19.6	6.7	9.6
R_2564	410901	6952360	11.7	110.9	17.3	19.3	6.6	9.3
R_2565	410901	6952330	11.0	106.3	17.2	19.1	6.6	9.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2566	410902	6952400	12.8	123.8	17.3	19.7	6.7	9.7
R_2567	410906	6952420	13.6	129.8	17.4	19.8	6.7	9.8
R_2568	410907	6954926	8.9	71.1	17.3	18.7	6.6	8.2
R_2569	410915	6952330	11.0	106.4	17.2	19.1	6.6	9.1
R_2570	410917	6952380	12.1	121.7	17.3	19.5	6.7	9.5
R_2571	410920	6952400	12.7	122.8	17.3	19.6	6.7	9.6
R_2572	410921	6952360	11.6	110.8	17.3	19.3	6.6	9.3
R_2573	410923	6952420	13.4	129.2	17.4	19.8	6.7	9.8
R_2574	410927	6952440	14.2	137.4	17.4	20.0	6.8	10.0
R_2575	410931	6952330	10.9	106.5	17.2	19.1	6.6	9.1
R_2576	410940	6952400	12.6	123.0	17.3	19.6	6.7	9.7
R_2577	410941	6952390	12.2	122.4	17.3	19.6	6.7	9.6
R_2578	410941	6952380	12.0	121.9	17.3	19.5	6.7	9.5
R_2579	410942	6952420	13.3	129.0	17.3	19.8	6.7	9.8
R_2580	410942	6952340	11.1	107.2	17.3	19.2	6.6	9.2
R_2581	410943	6952360	11.4	111.4	17.3	19.3	6.6	9.3
R_2582	410959	6952340	11.0	107.2	17.2	19.2	6.6	9.2
R_2583	410960	6952360	11.4	111.4	17.3	19.3	6.6	9.3
R_2584	410967	6952470	15.3	142.4	17.4	20.4	6.8	10.4
R_2585	410993	6954955	8.8	71.1	17.2	18.6	6.6	8.2
R_2586	411015	6952760	15.1	148.1	17.5	21.1	6.8	11.1
R_2587	411034	6955028	8.7	71.1	17.2	18.4	6.6	8.1
R_2588	411070	6955023	8.7	71.1	17.2	18.4	6.6	8.1
R_2589	411102	6952060	8.8	77.9	17.2	18.3	6.5	8.3
R_2590	411102	6952060	8.8	77.9	17.2	18.3	6.5	8.3

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2591	411138	6953931	13.7	76.2	18.4	21.4	7.0	9.0
R_2592	411181	6953060	10.4	91.8	17.3	19.0	6.6	8.9
R_2593	411181	6953060	10.4	91.8	17.3	19.0	6.6	8.9
R_2594	411196	6955460	8.5	70.6	17.2	18.0	6.5	8.0
R_2595	411228	6952770	13.2	131.1	17.4	20.3	6.7	10.4
R_2596	411298	6953481	10.0	72.8	17.4	19.0	6.6	8.4
R_2597	411433	6952910	10.6	113.1	17.3	19.1	6.6	9.2
R_2598	411453	6953280	10.0	76.0	17.4	18.9	6.6	8.5
R_2599	411487	6955590	8.3	69.8	17.2	17.8	6.5	7.9
R_2600	411488	6953210	10.1	76.6	17.4	18.8	6.6	8.5
R_2601	411489	6953360	10.1	73.1	17.4	18.9	6.6	8.5
R_2602	411525	6952670	10.3	108.0	17.3	19.3	6.6	9.4
R_2603	411526	6952767	10.4	104.5	17.3	19.0	6.6	9.1
R_2604	411540	6955610	8.3	69.7	17.1	17.8	6.5	7.9
R_2605	411548	6952832	10.3	100.1	17.3	19.0	6.6	9.1
R_2606	411549	6953413	10.2	72.4	17.5	18.9	6.6	8.4
R_2607	411552	6952900	10.3	100.4	17.3	19.0	6.6	9.1
R_2608	411559	6952962	10.2	99.7	17.3	18.9	6.6	9.0
R_2609	411569	6953090	10.1	79.5	17.3	18.8	6.6	8.7
R_2610	411580	6953150	10.1	77.8	17.4	18.8	6.6	8.6
R_2611	411589	6952300	9.0	105.1	17.2	18.6	6.6	8.6
R_2612	411591	6953250	10.1	76.5	17.4	18.9	6.6	8.5
R_2613	411599	6953449	10.3	72.0	17.5	19.0	6.7	8.4
R_2614	411604	6953016	10.1	92.2	17.3	18.8	6.6	8.8
R_2615	411625	6952630	9.8	104.9	17.2	19.0	6.6	9.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2616	411634	6952730	9.9	102.8	17.2	18.8	6.6	8.9
R_2617	411642	6952370	9.1	105.8	17.2	18.7	6.6	8.7
R_2618	411655	6952860	10.0	89.7	17.3	18.7	6.6	8.8
R_2619	411664	6952920	10.0	93.4	17.3	18.7	6.6	8.8
R_2620	411676	6952990	10.0	91.2	17.3	18.7	6.6	8.8
R_2621	411676	6952790	9.8	84.8	17.2	18.6	6.6	8.7
R_2622	411678	6953479	10.4	71.6	17.5	19.0	6.7	8.4
R_2623	411692	6953330	10.2	75.8	17.4	18.9	6.6	8.4
R_2624	411700	6953120	10.0	77.8	17.3	18.7	6.6	8.6
R_2625	411703	6953250	10.1	76.7	17.4	18.8	6.6	8.4
R_2626	411707	6953180	10.0	77.4	17.4	18.8	6.6	8.5
R_2627	411715	6953060	9.9	83.6	17.3	18.6	6.6	8.7
R_2628	411729	6952240	8.7	90.1	17.2	18.4	6.5	8.4
R_2629	411739	6952320	8.9	95.6	17.2	18.5	6.5	8.5
R_2630	411742	6954180	8.7	69.9	17.2	18.4	6.6	8.1
R_2631	411749	6954210	8.6	69.9	17.2	18.3	6.5	8.0
R_2632	411753	6953482	10.4	71.3	17.5	19.0	6.7	8.4
R_2633	411753	6954060	9.0	71.8	17.3	18.9	6.6	8.2
R_2634	411758	6952390	9.0	97.7	17.2	18.5	6.5	8.6
R_2635	411763	6951960	8.4	71.7	17.1	18.1	6.5	8.2
R_2636	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2637	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2638	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2639	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2640	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2641	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2642	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2643	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2644	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2645	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2646	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2647	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2648	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2649	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2650	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2651	411779	6952220	8.7	83.0	17.2	18.3	6.5	8.4
R_2652	411782	6952550	9.3	97.8	17.2	18.7	6.6	8.7
R_2653	411782	6953410	10.2	72.1	17.5	18.9	6.7	8.4
R_2654	411789	6952620	9.4	95.8	17.2	18.6	6.6	8.7
R_2655	411799	6952690	9.4	87.4	17.2	18.6	6.6	8.7
R_2656	411802	6955450	8.2	69.6	17.1	17.8	6.5	7.9
R_2657	411808	6952760	9.5	83.8	17.2	18.5	6.6	8.6
R_2658	411815	6952310	8.8	88.2	17.2	18.4	6.5	8.4
R_2659	411817	6952820	9.5	78.9	17.2	18.5	6.6	8.5
R_2660	411822	6954001	9.3	72.5	17.4	19.2	6.6	8.4
R_2661	411823	6955620	8.2	68.4	17.1	17.8	6.5	7.8
R_2662	411827	6952890	9.6	77.7	17.2	18.5	6.6	8.5
R_2663	411828	6952380	8.9	91.9	17.2	18.5	6.5	8.5
R_2664	411829	6952240	8.7	82.0	17.2	18.3	6.5	8.4
R_2665	411836	6952950	9.6	77.2	17.3	18.5	6.6	8.6

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2666	411846	6953020	9.6	76.7	17.3	18.5	6.6	8.6
R_2667	411852	6952290	8.7	84.0	17.2	18.4	6.5	8.4
R_2668	411855	6953080	9.7	76.4	17.3	18.5	6.6	8.5
R_2669	411855	6952310	8.7	85.2	17.2	18.4	6.5	8.4
R_2670	411856	6952210	8.6	78.5	17.2	18.3	6.5	8.3
R_2671	411864	6953150	9.7	76.5	17.3	18.6	6.6	8.5
R_2672	411874	6953210	9.8	76.4	17.4	18.7	6.6	8.5
R_2673	411883	6952280	8.7	81.4	17.2	18.3	6.5	8.4
R_2674	411885	6952210	8.6	77.2	17.2	18.3	6.5	8.3
R_2675	411885	6955100	8.3	69.9	17.2	17.9	6.5	7.9
R_2676	411885	6955100	8.3	69.9	17.2	17.9	6.5	7.9
R_2677	411885	6955100	8.3	69.9	17.2	17.9	6.5	7.9
R_2678	411885	6955100	8.3	69.9	17.2	17.9	6.5	7.9
R_2679	411885	6955100	8.3	69.9	17.2	17.9	6.5	7.9
R_2680	411912	6952290	8.7	80.3	17.2	18.3	6.5	8.3
R_2681	411914	6952210	8.6	75.9	17.2	18.3	6.5	8.3
R_2682	411924	6952330	8.7	81.4	17.2	18.4	6.5	8.4
R_2683	411924	6952330	8.7	81.4	17.2	18.4	6.5	8.4
R_2684	411924	6953445	10.2	71.6	17.5	18.9	6.7	8.3
R_2685	411930	6952520	9.0	85.8	17.2	18.5	6.6	8.5
R_2686	411945	6952210	8.6	74.8	17.2	18.2	6.5	8.3
R_2687	411951	6952610	9.1	84.9	17.2	18.5	6.6	8.5
R_2688	411962	6952690	9.1	81.0	17.2	18.4	6.6	8.5
R_2689	411973	6952760	9.2	77.5	17.2	18.4	6.6	8.4
R_2690	411984	6952840	9.2	76.6	17.2	18.4	6.6	8.4

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2691	411994	6952910	9.2	76.3	17.2	18.4	6.6	8.4
R_2692	412003	6951880	8.3	71.4	17.1	18.0	6.5	8.1
R_2693	412007	6952970	9.3	76.0	17.2	18.4	6.6	8.4
R_2694	412008	6953150	9.5	74.8	17.3	18.6	6.6	8.4
R_2695	412018	6953060	9.4	74.4	17.3	18.4	6.6	8.4
R_2696	412072	6952490	8.8	81.2	17.2	18.4	6.5	8.3
R_2697	412080	6953419	10.0	72.0	17.5	18.9	6.6	8.3
R_2698	412082	6952560	8.8	81.4	17.2	18.4	6.5	8.4
R_2699	412092	6952220	8.5	73.3	17.1	18.2	6.5	8.2
R_2700	412095	6955190	8.2	69.5	17.1	17.8	6.5	7.9
R_2701	412098	6951960	8.3	71.3	17.1	18.0	6.5	8.1
R_2702	412100	6953140	9.4	72.9	17.3	18.5	6.6	8.4
R_2703	412102	6952690	8.9	78.8	17.2	18.4	6.6	8.4
R_2704	412104	6952610	8.9	80.7	17.2	18.4	6.5	8.4
R_2705	412109	6951870	8.3	71.3	17.1	18.0	6.5	8.1
R_2706	412112	6952760	9.0	75.9	17.2	18.3	6.6	8.4
R_2707	412117	6952090	8.4	71.3	17.1	18.1	6.5	8.2
R_2708	412122	6952830	9.0	75.7	17.2	18.3	6.6	8.3
R_2709	412132	6952900	9.0	73.9	17.2	18.3	6.6	8.3
R_2710	412142	6952970	9.1	73.5	17.2	18.4	6.6	8.3
R_2711	412152	6952330	8.6	76.6	17.2	18.2	6.5	8.2
R_2712	412152	6952330	8.6	76.6	17.2	18.2	6.5	8.2
R_2713	412152	6952330	8.6	76.6	17.2	18.2	6.5	8.2
R_2714	412152	6952330	8.6	76.6	17.2	18.2	6.5	8.2
R_2715	412152	6952330	8.6	76.6	17.2	18.2	6.5	8.2

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2716	412152	6952330	8.6	76.6	17.2	18.2	6.5	8.2
R_2717	412155	6953040	9.1	73.2	17.2	18.4	6.6	8.3
R_2718	412191	6953130	9.2	72.6	17.3	18.5	6.6	8.3
R_2719	412214	6952600	8.7	77.0	17.2	18.3	6.5	8.3
R_2720	412237	6952460	8.6	76.8	17.2	18.3	6.5	8.2
R_2721	412246	6952530	8.7	76.6	17.2	18.3	6.5	8.3
R_2722	412266	6952670	8.7	72.3	17.2	18.3	6.5	8.3
R_2723	412270	6955590	8.1	64.5	17.1	17.7	6.5	7.8
R_2724	412275	6952740	8.8	72.1	17.2	18.3	6.5	8.3
R_2725	412283	6955700	8.1	63.4	17.1	17.7	6.5	7.8
R_2726	412285	6952800	8.8	72.3	17.2	18.3	6.5	8.3
R_2727	412294	6952870	8.8	72.5	17.2	18.3	6.6	8.2
R_2728	412303	6952940	8.9	72.6	17.2	18.4	6.6	8.2
R_2729	412315	6953010	9.0	72.6	17.2	18.5	6.6	8.2
R_2730	412324	6953080	9.0	72.4	17.2	18.5	6.6	8.3
R_2731	412333	6953140	9.1	72.2	17.3	18.6	6.6	8.3
R_2732	412343	6952270	8.4	70.8	17.1	18.1	6.5	8.1
R_2733	412375	6955640	8.1	63.3	17.1	17.7	6.5	7.8
R_2734	412481	6955560	8.1	63.3	17.1	17.7	6.5	7.8
R_2735	412528	6953327	9.2	71.6	17.3	19.1	6.6	8.4
R_2736	412654	6953550	10.1	75.9	17.6	20.8	6.7	8.9
R_2737	412709	6953478	9.6	71.8	17.5	20.7	6.6	8.9
R_2738	412710	6953420	9.4	71.7	17.4	20.2	6.6	8.7
R_2739	412712	6954570	8.3	67.3	17.2	18.0	6.5	7.9
R_2740	412767	6952440	8.4	70.0	17.2	18.2	6.5	8.1

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2741	412775	6953000	8.7	71.2	17.2	18.8	6.6	8.3
R_2742	412792	6952940	8.6	71.1	17.2	18.7	6.5	8.2
R_2743	412810	6952880	8.6	71.0	17.2	18.6	6.5	8.2
R_2744	412817	6952100	8.2	65.4	17.1	18.0	6.5	8.0
R_2745	412829	6952830	8.5	70.9	17.2	18.5	6.5	8.2
R_2746	412852	6952704	8.5	70.6	17.2	18.4	6.5	8.1
R_2747	412853	6952770	8.5	70.7	17.2	18.4	6.5	8.1
R_2748	412904	6952670	8.4	70.4	17.2	18.3	6.5	8.1
R_2749	412931	6952678	8.4	70.4	17.2	18.3	6.5	8.1
R_2750	412961	6952580	8.4	70.1	17.2	18.3	6.5	8.1
R_2751	412964	6952290	8.3	69.2	17.1	18.1	6.5	8.0
R_2752	413000	6952510	8.3	69.9	17.2	18.2	6.5	8.1
R_2753	413060	6952450	8.3	69.8	17.2	18.2	6.5	8.0
R_2754	413117	6953190	8.7	70.6	17.2	19.0	6.6	8.3
R_2755	413141	6952400	8.2	69.6	17.2	18.1	6.5	8.0
R_2756	413176	6952820	8.4	70.3	17.2	18.4	6.5	8.1
R_2757	413210	6952710	8.3	70.1	17.2	18.3	6.5	8.1
R_2758	413216	6952360	8.2	68.9	17.1	18.1	6.5	8.0
R_2759	413227	6953740	8.5	70.5	17.2	18.5	6.5	8.1
R_2760	413227	6953740	8.5	70.5	17.2	18.5	6.5	8.1
R_2761	413321	6952790	8.3	70.0	17.2	18.4	6.5	8.1
R_2762	413332	6952820	8.3	70.0	17.2	18.4	6.5	8.1
R_2763	413385	6953390	8.4	70.2	17.2	18.3	6.5	8.0
R_2764	413421	6952560	8.2	69.5	17.1	18.2	6.5	8.0
R_2765	413451	6952800	8.2	69.7	17.2	18.3	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2766	413460	6953320	8.4	70.0	17.2	18.2	6.5	8.0
R_2767	413460	6953320	8.4	70.0	17.2	18.2	6.5	8.0
R_2768	413460	6953320	8.4	70.0	17.2	18.2	6.5	8.0
R_2769	413467	6952670	8.2	69.6	17.1	18.2	6.5	8.0
R_2770	413467	6952850	8.2	69.7	17.2	18.3	6.5	8.0
R_2771	413475	6954300	8.1	63.9	17.1	17.8	6.5	7.8
R_2772	413475	6954300	8.1	63.9	17.1	17.8	6.5	7.8
R_2773	413475	6954300	8.1	63.9	17.1	17.8	6.5	7.8
R_2774	413475	6954300	8.1	63.9	17.1	17.8	6.5	7.8
R_2775	413477	6952910	8.2	69.7	17.2	18.3	6.5	8.0
R_2776	413485	6952610	8.2	69.5	17.1	18.2	6.5	8.0
R_2777	413491	6953090	8.3	69.7	17.2	18.3	6.5	8.0
R_2778	413494	6952730	8.2	69.6	17.1	18.2	6.5	8.0
R_2779	413506	6953050	8.3	69.7	17.2	18.3	6.5	8.0
R_2780	413510	6952650	8.2	69.5	17.1	18.2	6.5	8.0
R_2781	413514	6953030	8.3	69.7	17.2	18.2	6.5	8.0
R_2782	413516	6952750	8.2	69.6	17.1	18.2	6.5	8.0
R_2783	413519	6952770	8.2	69.6	17.1	18.2	6.5	8.0
R_2784	413522	6953010	8.2	69.6	17.2	18.2	6.5	8.0
R_2785	413527	6952790	8.2	69.6	17.1	18.2	6.5	8.0
R_2786	413529	6953150	8.3	69.6	17.2	18.2	6.5	8.0
R_2787	413530	6952710	8.2	69.5	17.1	18.2	6.5	8.0
R_2788	413531	6952900	8.2	69.6	17.2	18.2	6.5	8.0
R_2789	413536	6953280	8.3	69.7	17.2	18.1	6.5	8.0
R_2790	413537	6952990	8.2	69.6	17.2	18.2	6.5	8.0

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2791	413538	6952950	8.2	69.6	17.2	18.2	6.5	8.0
R_2792	413539	6952970	8.2	69.6	17.2	18.2	6.5	8.0
R_2793	413544	6952690	8.2	69.3	17.1	18.1	6.5	8.0
R_2794	413545	6953090	8.2	69.6	17.2	18.2	6.5	8.0
R_2795	413560	6953070	8.2	69.5	17.2	18.2	6.5	8.0
R_2796	413566	6952790	8.2	69.5	17.1	18.1	6.5	8.0
R_2797	413567	6952880	8.2	69.5	17.1	18.2	6.5	8.0
R_2798	413572	6953040	8.2	69.5	17.2	18.2	6.5	8.0
R_2799	413575	6953140	8.2	69.5	17.2	18.1	6.5	8.0
R_2800	413577	6952810	8.2	69.4	17.1	18.1	6.5	8.0
R_2801	413582	6952870	8.2	69.5	17.1	18.1	6.5	8.0
R_2802	413584	6953020	8.2	69.5	17.2	18.1	6.5	8.0
R_2803	413587	6952830	8.2	69.2	17.1	18.1	6.5	8.0
R_2804	413592	6952930	8.2	69.4	17.1	18.1	6.5	8.0
R_2805	413596	6952860	8.2	69.2	17.1	18.1	6.5	8.0
R_2806	413604	6952960	8.2	69.1	17.1	18.1	6.5	8.0
R_2807	413604	6953270	8.2	69.6	17.2	18.0	6.5	7.9
R_2808	413611	6953140	8.2	69.5	17.2	18.1	6.5	7.9
R_2809	413618	6952910	8.2	68.8	17.1	18.1	6.5	8.0
R_2810	413624	6952840	8.1	68.6	17.1	18.1	6.5	8.0
R_2811	413628	6953060	8.2	69.2	17.1	18.1	6.5	7.9
R_2812	413636	6952980	8.2	68.5	17.1	18.1	6.5	8.0
R_2813	413641	6952900	8.1	68.4	17.1	18.1	6.5	8.0
R_2814	413655	6952990	8.2	68.1	17.1	18.1	6.5	7.9
R_2815	413656	6953110	8.2	69.2	17.1	18.0	6.5	7.9

Pollutant			NO_2		PM_{10}		$PM_{2.5}$	
Averaging time			1 year	1 hour	1 year	24 hours	1 year	24 hours
Statistic			Average	Maximum	Average	Maximum	Average	Maximum
Air quality goal (µg/m³)			62	250	25	50	8	25
Background concentration (µg/m³)			7.8	57.5	17.1	17.4	6.5	7.6
Maximum predicted result (excluding R_898) (µg/m³)			23.6	171.9	18.4	24.4	7.3	13.7
Receptor ID	Coordinate (X, m, GDA Zone 56)	Coordinate (Y, m, GDA Zone 56)	Cumulative maximum predicted ground level concentration (µg/m³)					
R_2816	413658	6953230	8.2	69.4	17.1	18.0	6.5	7.9
R_2817	413663	6952890	8.1	67.9	17.1	18.1	6.5	7.9
R_2818	413664	6953150	8.2	69.3	17.1	18.0	6.5	7.9
R_2819	413667	6952920	8.1	67.9	17.1	18.1	6.5	7.9
R_2820	413670	6953280	8.2	69.4	17.1	17.9	6.5	7.9
R_2821	413673	6953000	8.1	67.8	17.1	18.0	6.5	7.9
R_2822	413675	6953320	8.2	69.4	17.1	17.9	6.5	7.9
R_2823	413683	6953210	8.2	69.3	17.1	18.0	6.5	7.9
R_2824	413689	6952970	8.1	67.4	17.1	18.0	6.5	7.9
R_2825	413690	6953230	8.2	69.3	17.1	17.9	6.5	7.9
R_2826	413691	6953010	8.1	67.7	17.1	18.0	6.5	7.9
R_2827	413710	6953010	8.1	67.3	17.1	18.0	6.5	7.9
R_2828	413718	6952970	8.1	66.8	17.1	18.0	6.5	7.9
R_2829	413730	6953000	8.1	66.9	17.1	18.0	6.5	7.9

APPENDIX

K

Air Quality Technical Report

Appendix F Example CALPUFF input file

GOWRIE TO HELIDON ENVIRONMENTAL IMPACT STATEMENT

Appendix F
Example CALPUFF Input File

Appendix F
Example CALPUFF Input File

```
CALPUFF.INP     7.0             Generated by CALPUFF View 8.5.0 - 12/08/2019
G2H Base Model


---------- Run title (3 lines) ------------------------------------------

                CALPUFF MODEL CONTROL FILE
                --------------------------

------------------------------------------------------------------------------

INPUT GROUP: 0 -- Input and Output File Names

--------------
Default Name  Type          File Name
------------  ----          ---------
CALMET.DAT    input    * METDAT = *
   or
ISCMET.DAT    input    * ISCDAT = *
   or
PLMMET.DAT    input    * PLMDAT = *
   or
PROFILE.DAT   input    * PRFDAT = *
SURFACE.DAT   input    * SFCDAT = *
RESTARTB.DAT  input    * RSTARTB = *
------------------------------------------------------------------------------
CALPUFF.LST   output   ! PUFLST = CALPUFF.LST !
CONC.DAT      output   ! CONDAT = CONC.DAT !
DFLX.DAT      output   ! DFDAT = DFLX.DAT !
WFLX.DAT      output   ! WFDAT = WFLX.DAT !

VISB.DAT      output   * VISDAT = *
TK2D.DAT      output   * T2DDAT = *
RHO2D.DAT     output   * RHODAT = *
RESTARTE.DAT  output   * RSTARTE = *
------------------------------------------------------------------------------
Other Files
-----------
OZONE.DAT     input    * OZDAT = *
VD.DAT        input    * VDDAT = *
CHEM.DAT      input    * CHEMDAT = *
AUX           input    * AUXEXT = *
(Extension added to METDAT filename(s) for files
 with auxiliary 2D and 3D data)
H2O2.DAT      input    * H2O2DAT = *
NH3Z.DAT      input    * NH3ZDAT = *
HILL.DAT      input    * HILDAT = *
HILLRCT.DAT   input    * RCTDAT = *
COASTLN.DAT   input    * CSTDAT = *
FLUXBDY.DAT   input    * BDYDAT = *
BCON.DAT      input    * BCNDAT = *
DEBUG.DAT     output   * DEBUG = *
MASSFLX.DAT   output   * FLXDAT = *
MASSBAL.DAT   output   * BALDAT = *
FOG.DAT       output   * FOGDAT = *
RISE.DAT      output   * RISDAT = *
PFTRAK.DAT    output   * TRKDAT = *
------------------------------------------------------------------------------
All file names will be converted to lower case if LCFILES = T
Otherwise, if LCFILES = F, file names will be converted to UPPER CASE
        T = lower case      ! LCFILES = F !
        F = UPPER CASE
NOTE: (1) file/path names can be up to 132 characters in length


Provision for multiple input files
----------------------------------
    Number of CALMET.DAT Domains (NMETDOM)
                            Default: 1       ! NMETDOM = 1 !

    Number of CALMET.DAT files (NMETDAT)
```

(Total for ALL Domains)
Default: 1 ! NMETDAT = 24 !

Number of PTEMARB.DAT files for run (NPTDAT)
Default: 0 ! NPTDAT = 0 !

Number of BAEMARB.DAT files for run (NARDAT)
Default: 0 ! NARDAT = 0 !

Number of VOLEMARB.DAT files for run (NVOLDAT)
Default: 0 ! NVOLDAT = 0 !

Number of FLARE source files (FLEMARB.DAT)
with time-varying data (NFLDAT)
Default: 0 ! NFLDAT = 0 !

Number of ROAD source files (RDEMARB.DAT)
with time-varying data (NRDDAT)
Default: 0 ! NRDDAT = 0 !

Number of BUOYANT LINE source files (LNEMARB.DAT)
with time-varying data (NLNDAT)
Default: 0 ! NLNDAT = 0 !
Note: Only 1 BUOYANT LINE source file is allowed

!END!

Subgroup (0a)

Provide a name for each CALMET domain if NMETDOM > 1
Enter NMETDOM lines.
a,b
Default Name Domain Name
---
* DOMAINLIST = *

The following CALMET.DAT filenames are processed in sequence
if NMETDAT > 1

Enter NMETDAT lines, 1 line for each file name.

a,c,d
Default Name Type File Name
---
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-01-01-01-0000-2013-01-17-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-01-17-00-0000-2013-02-01-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-02-01-00-0000-2013-02-16-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-02-16-00-0000-2013-03-04-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-03-04-00-0000-2013-03-19-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-03-19-00-0000-2013-04-03-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-04-03-00-0000-2013-04-18-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-04-18-00-0000-2013-05-03-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-05-03-00-0000-2013-05-18-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-05-18-00-0000-2013-06-03-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-06-03-00-0000-2013-06-18-00-0000.dat ! !END!
none input ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-06-18-00-0000-2013-07-03-00-0000.dat ! !END!

```
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-07-03-00-0000-2013-07-
18-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-07-18-00-0000-2013-08-
02-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-08-02-00-0000-2013-08-
17-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-08-17-00-0000-2013-09-
02-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-09-02-00-0000-2013-09-
17-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-09-17-00-0000-2013-10-
02-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-10-02-00-0000-2013-10-
17-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-10-17-00-0000-2013-11-
01-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-11-01-00-0000-2013-11-
16-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-11-16-00-0000-2013-12-
02-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-12-02-00-0000-2013-12-
17-00-0000.dat    !  !END!
 none        input    ! METDAT= E:\Projects\CALPUFF\Inland Rail\G2H\calmet\CALMET_2013-12-17-00-0000-2013-12-
31-23-0000.dat    !  !END!

-------------
   a
    The name for each CALMET domain and each CALMET.DAT file is treated
    as a separate input subgroup and therefore must end with an input
    group terminator.
   b
    Use DOMAIN1= to assign the name for the outermost CALMET domain.
    Use DOMAIN2= to assign the name for the next inner CALMET domain.
    Use DOMAIN3= to assign the name for the next inner CALMET domain, etc.
     ------------------------------------------------------------------
     |  When inner domains with equal resolution (grid-cell size)     |
     |  overlap, the data from the FIRST such domain in the list will |
     |  be used if all other criteria for choosing the controlling    |
     |  grid domain are inconclusive.                                 |
     ------------------------------------------------------------------
   c
    Use METDAT1= to assign the file names for the outermost CALMET domain.
    Use METDAT2= to assign the file names for the next inner CALMET domain.
    Use METDAT3= to assign the file names for the next inner CALMET domain, etc.
   d
    The filenames for each domain must be provided in sequential order


-------------
Subgroup (0b) – PTEMARB.DAT files
-------------

 POINT Source File Names
 The following PTEMARB.DAT filenames are processed if NPTDAT>0
 A total of NPTDAT lines is expected with one file name assigned per line
 Each line is treated as an input group and must terminate with END
 (surrounded by delimiters)
 (Each file contains emissions parameters for the entire period modeled
  for 1 or more sources)

Default Name  Type          File Name
------------  ----          ---------
* PTDATLIST = *


-------------
Subgroup (0c) – BAEMARB.DAT files
-------------

 BUOYANT AREA Source File Names
 The following BAEMARB.DAT filenames are processed if NARDAT>0
```

A total of NARDAT lines is expected with one file name assigned per line
Each line is treated as an input group and must terminate with END
(surrounded by delimiters)
(Each file contains emissions parameters for the entire period modeled
for 1 or more sources)

Default Name	Type	File Name
* ARDATLIST = *		

Subgroup (0d) – VOLEMARB.DAT files

VOLUME Source File Names
The following VOLEMARB.DAT filenames are processed if NVOLDAT>0
A total of NVOLDAT lines is expected with one file name assigned per line
Each line is treated as an input group and must terminate with END
(surrounded by delimiters)
(Each file contains emissions parameters for the entire period modeled
for 1 or more sources)

Default Name	Type	File Name
* VOLDATLIST = *		

Subgroup (0e) – FLEMARB.DAT files

FLARE Source File Names
The following FLEMARB.DAT filenames are processed if NFLDAT>0
A total of NFLDAT lines is expected with one file name assigned per line
Each line is treated as an input group and must terminate with END
(surrounded by delimiters)
(Each file contains emissions parameters for the entire period modeled
for 1 or more sources)

Default Name	Type	File Name
* FLEMARBLIST = *		

Subgroup (0f) – RDEMARB.DAT files

ROAD Source File Names
The following RDEMARB.DAT filenames are processed if NRDDAT>0
A total of NRDDAT lines is expected with one file name assigned per line
Each line is treated as an input group and must terminate with END
(surrounded by delimiters)
(Each file contains emissions parameters for the entire period modeled
for 1 or more sources)

Default Name	Type	File Name
* RDEMARBLIST = *		

Subgroup (0g) – LNEMARB.DAT file

BUOYANT LINE Source File Name (not more than 1)
The following LNEMARB.DAT filename is processed if NLNDAT>0
The assignment is treated as an input group and must terminate with END
(surrounded by delimiters)

Default Name	Type	File Name

---------- ---- ---------
* LNEMARBLIST = *

INPUT GROUP: 1 -- General run control parameters

Option to run all periods found
in the met. file (METRUN) Default: 0 ! METRUN = 0 !

METRUN = 0 - Run period explicitly defined below
METRUN = 1 - Run all periods in met. file

Starting date: Year (IBYR) -- No default ! IBYR = 2013 !
Month (IBMO) -- No default ! IBMO = 1 !
Day (IBDY) -- No default ! IBDY = 1 !
Starting time: Hour (IBHR) -- No default ! IBHR = 1 !
Minute (IBMIN) -- No default ! IBMIN = 0 !
Second (IBSEC) -- No default ! IBSEC = 0 !

Ending date: Year (IEYR) -- No default ! IEYR = 2013 !
Month (IEMO) -- No default ! IEMO = 12 !
Day (IEDY) -- No default ! IEDY = 31 !
Ending time: Hour (IEHR) -- No default ! IEHR = 22 !
Minute (IEMIN) -- No default ! IEMIN = 0 !
Second (IESEC) -- No default ! IESEC = 0 !

(These are only used if METRUN = 0)

Base time zone: (ABTZ) -- No default ! ABTZ = UTC+1000 !
(character*8)
The modeling domain may span multiple time zones. ABTZ defines the
base time zone used for the entire simulation. This must match the
base time zone of the meteorological data.
Examples:
Greenwich Mean Time (GMT) = UTC+0000
EST = UTC-0500
CST = UTC-0600
MST = UTC-0700
PST = UTC-0800
Los Angeles, USA = UTC-0800
New York, USA = UTC-0500
Santiago, Chile = UTC-0400
UK = UTC+0000
Western Europe = UTC+0100
Rome, Italy = UTC+0100
Cape Town, S.Africa = UTC+0200
Sydney, Australia = UTC+1000

Length of modeling time-step (seconds)
Equal to update period in the primary
meteorological data files, or an
integer fraction of it (1/2, 1/3 ...)
Must be no larger than 1 hour
(NSECDT) Default:3600 ! NSECDT = 3600 !
Units: seconds

Number of chemical species (NSPEC)
Default: 5 ! NSPEC = 6 !

Number of chemical species
to be emitted (NSE) Default: 3 ! NSE = 6 !

Flag to stop run after
SETUP phase (ITEST) Default: 2 ! ITEST = 2 !
(Used to allow checking
of the model inputs, files, etc.)
ITEST = 1 - STOPS program after SETUP phase
ITEST = 2 - Continues with execution of program
after SETUP

Restart Configuration:

Control flag (MRESTART) Default: 0 ! MRESTART = 0 !

0 = Do not read or write a restart file
1 = Read a restart file at the beginning of the run
2 = Write a restart file during run
3 = Read a restart file at beginning of run and write a restart file during run

Number of periods in Restart output cycle (NRESPD) Default: 0 ! NRESPD = 0 !

0 = File written only at last period
>0 = File updated every NRESPD periods

Meteorological Data Format (METFM)
Default: 1 ! METFM = 1 !

METFM = 1 - CALMET binary file (CALMET.MET)
METFM = 2 - ISC ASCII file (ISCMET.MET)
METFM = 3 - AUSPLUME ASCII file (PLMMET.MET)
METFM = 4 - CTDM plus tower file (PROFILE.DAT) and surface parameters file (SURFACE.DAT)
METFM = 5 - AERMET tower file (PROFILE.DAT) and surface parameters file (SURFACE.DAT)

Meteorological Profile Data Format (MPRFFM)
(used only for METFM = 1, 2, 3)
Default: 1 ! MPRFFM = 1 !

MPRFFM = 1 - CTDM plus tower file (PROFILE.DAT)
MPRFFM = 2 - AERMET tower file (PROFILE.DAT)

Sigma-y is adjusted by the factor (AVET/PGTIME)**0.2 to either decrease it if the averaging time selected is less than the base averaging time, or increase it if the averaging time is greater.
The base averaging time is denoted as PGTIME due to historical reasons as this adjustment was originally applied to the PG sigma option. It is now applied to all dispersion options.
The factor is applied to the ambient turbulence sigma-v (m/s) and does not alter buoyancy enhancement or far-field Heffter growth.

Averaging Time (minutes) (AVET)
Default: 60.0 ! AVET = 60 !
Base Averaging Time (minutes) (PGTIME)
Default: 60.0 ! PGTIME = 60 !

Output units for binary concentration and flux files written in Dataset v2.2 or later formats
(IOUTU) Default: 1 ! IOUTU = 1 !
1 = mass - g/m3 (conc) or g/m2/s (dep)
2 = odour - odour_units (conc)
3 = radiation - Bq/m3 (conc) or Bq/m2/s (dep)

!END!

INPUT GROUP: 2 -- Technical options

Vertical distribution used in the near field (MGAUSS) Default: 1 ! MGAUSS = 1 !
0 = uniform
1 = Gaussian

Terrain adjustment method
(MCTADJ) Default: 3 ! MCTADJ = 3 !
0 = no adjustment
1 = ISC-type of terrain adjustment
2 = simple, CALPUFF-type of terrain adjustment
3 = partial plume path adjustment

Subgrid-scale complex terrain
flag (MCTSG) Default: 0 ! MCTSG = 0 !
0 = not modeled
1 = modeled

Near-field puffs modeled as
elongated slugs? (MSLUG) Default: 0 ! MSLUG = 0 !
0 = no
1 = yes (slug model used)

Transitional plume rise modeled?
(MTRANS) Default: 1 ! MTRANS = 1 !
0 = no (i.e., final rise only)
1 = yes (i.e., transitional rise computed)

Stack tip downwash? (MTIP) Default: 1 ! MTIP = 1 !
0 = no (i.e., no stack tip downwash)
1 = yes (i.e., use stack tip downwash)

Method used to compute plume rise for
point sources not subject to building
downwash? (MRISE) Default: 1 ! MRISE = 1 !
1 = Briggs plume rise
2 = Numerical plume rise

Apply stack-tip downwash to FLARE sources?
(MTIP_FL) Default: 0 ! MTIP_FL = 0 !
0 = no (no stack-tip downwash)
1 = yes (apply stack-tip downwash)

Plume rise module for FLARE sources
(MRISE_FL) Default: 2 ! MRISE_FL = 2 !
1 = Briggs module
2 = Numerical rise module

Method used to simulate building
downwash? (MBDW) Default: 1 ! MBDW = 1 !
1 = ISC method
2 = PRIME method

Vertical wind shear modeled above
stack top? (MSHEAR) Default: 0 ! MSHEAR = 0 !
0 = no (i.e., vertical wind shear not modeled)
1 = yes (i.e., vertical wind shear modeled)

Puff splitting allowed? (MSPLIT) Default: 0 ! MSPLIT = 0 !
0 = no (i.e., puffs not split)
1 = yes (i.e., puffs are split)

Chemical mechanism flag (MCHEM) Default: 1 ! MCHEM = 0 !
0 = chemical transformation not modeled
1 = transformation rates computed internally (MESOPUFF II scheme)
2 = user-specified transformation rates used
3 = transformation rates computed internally (RIVAD/ARM3 scheme)
4 = secondary organic aerosol formation computed (MESOPUFF II scheme for OH)
5 = user-specified half-life with or without transfer to child species
6 = transformation rates computed

internally (Updated RIVAD scheme with
ISORROPIA equilibrium)
7 = transformation rates computed
internally (Updated RIVAD scheme with
ISORROPIA equilibrium and CalTech SOA)

Aqueous phase transformation flag (MAQCHEM)
(Used only if MCHEM = 6, or 7) Default: 0 ! MAQCHEM = 0 !
0 = aqueous phase transformation
not modeled
1 = transformation rates and wet
scavenging coefficients adjusted
for in-cloud aqueous phase reactions
(adapted from RADM cloud model
implementation in CMAQ/SCICHEM)

Liquid Water Content flag (MLWC)
(Used only if MAQCHEM = 1) Default: 1 ! MLWC = 1 !
0 = water content estimated from cloud cover
and presence of precipitation
1 = gridded cloud water data read from CALMET
water content output files (filenames are
the CALMET.DAT names PLUS the extension
AUXEXT provided in Input Group 0)

Wet removal modeled ? (MWET) Default: 1 ! MWET = 1 !
0 = no
1 = yes

Dry deposition modeled ? (MDRY) Default: 1 ! MDRY = 1 !
0 = no
1 = yes
(dry deposition method specified
for each species in Input Group 3)

Gravitational settling (plume tilt)
modeled ? (MTILT) Default: 0 ! MTILT = 0 !
0 = no
1 = yes
(puff center falls at the gravitational
settling velocity for 1 particle species)

Restrictions:
- MDRY = 1
- NSPEC = 1 (must be particle species as well)
- sg = 0 GEOMETRIC STANDARD DEVIATION in Group 8 is
set to zero for a single particle diameter

Method used to compute dispersion
coefficients (MDISP) Default: 3 ! MDISP = 2 !

1 = dispersion coefficients computed from measured values
of turbulence, sigma v, sigma w
2 = dispersion coefficients from internally calculated
sigma v, sigma w using micrometeorological variables
(u*, w*, L, etc.)
3 = PG dispersion coefficients for RURAL areas (computed using
the ISCST multi-segment approximation) and MP coefficients in
urban areas
4 = same as 3 except PG coefficients computed using
the MESOPUFF II eqns.
5 = CTDM sigmas used for stable and neutral conditions.
For unstable conditions, sigmas are computed as in
MDISP = 3, described above. MDISP = 5 assumes that
measured values are read

Sigma-v/sigma-theta, sigma-w measurements used? (MTURBVW)
(Used only if MDISP = 1 or 5) Default: 3 ! MTURBVW = 3 !
1 = use sigma-v or sigma-theta measurements
from PROFILE.DAT to compute sigma-y

(valid for METFM = 1, 2, 3, 4, 5)
2 = use sigma-w measurements
from PROFILE.DAT to compute sigma-z
(valid for METFM = 1, 2, 3, 4, 5)
3 = use both sigma-(v/theta) and sigma-w
from PROFILE.DAT to compute sigma-y and sigma-z
(valid for METFM = 1, 2, 3, 4, 5)
4 = use sigma-theta measurements
from PLMMET.DAT to compute sigma-y
(valid only if METFM = 3)

Back-up method used to compute dispersion
when measured turbulence data are
missing (MDISP2) Default: 3 ! MDISP2 = 3 !
(used only if MDISP = 1 or 5)
2 = dispersion coefficients from internally calculated
sigma v, sigma w using micrometeorological variables
(u*, w*, L, etc.)
3 = PG dispersion coefficients for RURAL areas (computed using
the ISCST multi-segment approximation) and MP coefficients in
urban areas
4 = same as 3 except PG coefficients computed using
the MESOPUFF II eqns.

[DIAGNOSTIC FEATURE]
Method used for Lagrangian timescale for Sigma-y
(used only if MDISP=1,2 or MDISP2=1,2)
(MTAULY) Default: 0 ! MTAULY = 0 !
0 = Draxler default 617.284 (s)
1 = Computed as Lag. Length / (.75 q) -- after SCIPUFF
10 <Direct user input (s) -- e.g., 306.9

[DIAGNOSTIC FEATURE]
Method used for Advective-Decay timescale for Turbulence
(used only if MDISP=2 or MDISP2=2)
(MTAUADV) Default: 0 ! MTAUADV = 0 !
0 = No turbulence advection
1 = Computed (OPTION NOT IMPLEMENTED)
10 <Direct user input (s) -- e.g., 800

Method used to compute turbulence sigma-v &
sigma-w using micrometeorological variables
(Used only if MDISP = 2 or MDISP2 = 2)
(MCTURB) Default: 1 ! MCTURB = 1 !
1 = Standard CALPUFF subroutines
2 = AERMOD subroutines

PG sigma-y,z adj. for roughness? Default: 0 ! MROUGH = 0 !
(MROUGH)
0 = no
1 = yes

Partial plume penetration of Default: 1 ! MPARTL = 1 !
elevated inversion modeled for
point sources?
(MPARTL)
0 = no
1 = yes

Partial plume penetration of Default: 1 ! MPARTLBA = 0 !
elevated inversion modeled for
buoyant area sources?
(MPARTLBA)
0 = no
1 = yes

Strength of temperature inversion Default: 0 ! MTINV = 0 !
provided in PROFILE.DAT extended records?
(MTINV)

0 = no (computed from measured/default gradients)
1 = yes

PDF used for dispersion under convective conditions?
Default: 0 ! MPDF = 1 !
(MPDF)
0 = no
1 = yes

Sub-Grid TIBL module used for shore line?
Default: 0 ! MSGTIBL = 0 !
(MSGTIBL)
0 = no
1 = yes

Boundary conditions (concentration) modeled?
Default: 0 ! MBCON = 0 !
(MBCON)
0 = no
1 = yes, using formatted BCON.DAT file
2 = yes, using unformatted CONC.DAT file

Note: MBCON > 0 requires that the last species modeled
be 'BCON'. Mass is placed in species BCON when
generating boundary condition puffs so that clean
air entering the modeling domain can be simulated
in the same way as polluted air. Specify zero
emission of species BCON for all regular sources.

Individual source contributions saved?
Default: 0 ! MSOURCE = 0 !
(MSOURCE)
0 = no
1 = yes

Analyses of fogging and icing impacts due to emissions from arrays of mechanically-forced cooling towers can be performed using CALPUFF in conjunction with a cooling tower emissions processor (CTEMISS) and its associated postprocessors. Hourly emissions of water vapor and temperature from each cooling tower cell are computed for the current cell configuration and ambient conditions by CTEMISS. CALPUFF models the dispersion of these emissions and provides cloud information in a specialized format for further analysis. Output to FOG.DAT is provided in either 'plume mode' or 'receptor mode' format.

Configure for FOG Model output?
Default: 0 ! MFOG = 0 !
(MFOG)
0 = no
1 = yes - report results in PLUME Mode format
2 = yes - report results in RECEPTOR Mode format

Test options specified to see if
they conform to regulatory
values? (MREG) Default: 1 ! MREG = 0 !

0 = NO checks are made
1 = Technical options must conform to USEPA
Long Range Transport (LRT) guidance
METFM 1 or 2
AVET 60. (min)
PGTIME 60. (min)
MGAUSS 1
MCTADJ 3
MTRANS 1
MTIP 1
MRISE 1
MCHEM 1 or 3 (if modeling SOx, NOx)

```
                MWET     1
                MDRY     1
                MDISP    2 or 3
                MPDF     0 if MDISP=3
                       1 if MDISP=2
                MROUGH   0
                MPARTL   1
                MPARTLBA 0
                SYTDEP   550. (m)
                MHFTSZ   0
                SVMIN    0.5 (m/s)


!END!


-------------------------------------------------------------------------------

INPUT GROUP: 3a, 3b -- Species list
-------------------

------------
Subgroup (3a)
------------

  The following species are modeled:

! CSPEC =        NOX !          !END!
! CSPEC =        TSP !          !END!
! CSPEC =       PM10 !          !END!
! CSPEC =      PM2.5 !          !END!
! CSPEC =         CO !          !END!
! CSPEC =        VOC !          !END!


                                        Dry              OUTPUT GROUP
   SPECIES        MODELED          EMITTED       DEPOSITED              NUMBER
    NAME       (0=NO, 1=YES)    (0=NO, 1=YES)    (0=NO,              (0=NONE,
  (Limit: 12                        1=COMPUTED-GAS       1=1st CGRUP,
   Characters                         2=COMPUTED-PARTICLE   2=2nd CGRUP,
   in length)                       3=USER-SPECIFIED)     3= etc.)

!        NOX  =        1,            1,         1,              0   !
!        TSP  =        1,            1,         2,              0   !
!       PM10  =        1,            1,         2,              0   !
!      PM2.5  =        1,            1,         2,              0   !
!         CO  =        1,            1,         0,              0   !
!        VOC  =        1,            1,         0,              0   !


!END!

  Note:  The last species in (3a) must be 'BCON' when using the
         boundary condition option (MBCON > 0). Species BCON should
         typically be modeled as inert (no chem transformation or
         removal).


-------------
Subgroup (3b)
-------------
  The following names are used for Species-Groups in which results
  for certain species are combined (added) prior to output. The
  CGRUP name will be used as the species name in output files.
  Use this feature to model specific particle-size distributions
  by treating each size-range as a separate species.
  Order must be consistent with 3(a) above.


-------------------------------------------------------------------------------
```

INPUT GROUP: 4 -- Map Projection and Grid control parameters

Projection for all (X,Y):

Map projection
(PMAP) Default: UTM ! PMAP = UTM !

UTM : Universal Transverse Mercator
TTM : Tangential Transverse Mercator
LCC : Lambert Conformal Conic
PS : Polar Stereographic
EM : Equatorial Mercator
LAZA : Lambert Azimuthal Equal Area

False Easting and Northing (km) at the projection origin
(Used only if PMAP= TTM, LCC, or LAZA)
(FEAST) Default=0.0 ! FEAST = 0.0 !
(FNORTH) Default=0.0 ! FNORTH = 0.0 !

UTM zone (1 to 60)
(Used only if PMAP=UTM)
(IUTMZN) No Default ! IUTMZN = 56 !

Hemisphere for UTM projection?
(Used only if PMAP=UTM)
(UTMHEM) Default: N ! UTMHEM = S !
N : Northern hemisphere projection
S : Southern hemisphere projection

Latitude and Longitude (decimal degrees) of projection origin
(Used only if PMAP= TTM, LCC, PS, EM, or LAZA)
(RLAT0) No Default ! RLAT0 = 0.00N !
(RLON0) No Default ! RLON0 = 0.00E !

TTM : RLON0 identifies central (true N/S) meridian of projection
RLAT0 selected for convenience
LCC : RLON0 identifies central (true N/S) meridian of projection
RLAT0 selected for convenience
PS : RLON0 identifies central (grid N/S) meridian of projection
RLAT0 selected for convenience
EM : RLON0 identifies central meridian of projection
RLAT0 is REPLACED by 0.0N (Equator)
LAZA: RLON0 identifies longitude of tangent-point of mapping plane
RLAT0 identifies latitude of tangent-point of mapping plane

Matching parallel(s) of latitude (decimal degrees) for projection
(Used only if PMAP= LCC or PS)
(XLAT1) No Default ! XLAT1 = 30S !
(XLAT2) No Default ! XLAT2 = 60S !

LCC : Projection cone slices through Earth's surface at XLAT1 and XLAT2
PS : Projection plane slices through Earth at XLAT1
(XLAT2 is not used)

Note: Latitudes and longitudes should be positive, and include a
letter N,S,E, or W indicating north or south latitude, and
east or west longitude. For example,
35.9 N Latitude = 35.9N
118.7 E Longitude = 118.7E

Datum-region

The Datum-Region for the coordinates is identified by a character
string. Many mapping products currently available use the model of the

Earth known as the World Geodetic System 1984 (WGS-84). Other local models may be in use, and their selection in CALMET will make its output consistent with local mapping products. The list of Datum-Regions with official transformation parameters is provided by the National Imagery and Mapping Agency (NIMA).

NIMA Datum - Regions(Examples)

WGS-84 WGS-84 Reference Ellipsoid and Geoid, Global coverage (WGS84)
NAS-C NORTH AMERICAN 1927 Clarke 1866 Spheroid, MEAN FOR CONUS (NAD27)
NAR-C NORTH AMERICAN 1983 GRS 80 Spheroid, MEAN FOR CONUS (NAD83)
NWS-84 NWS 6370KM Radius, Sphere
ESR-S ESRI REFERENCE 6371KM Radius, Sphere

Datum-region for output coordinates
(DATUM) Default: WGS-84 ! DATUM = WGS-84 !

METEOROLOGICAL Grid (outermost if nested CALMET grids are used):

Rectangular grid defined for projection PMAP,
with X the Easting and Y the Northing coordinate

No. X grid cells (NX) No default ! NX = 300 !
No. Y grid cells (NY) No default ! NY = 200 !
No. vertical layers (NZ) No default ! NZ = 10 !

Grid spacing (DGRIDKM) No default ! DGRIDKM = 0.2 !
Units: km

Cell face heights
(ZFACE(nz+1)) No defaults
Units: m
! ZFACE = 0.0, 20.0, 40.0, 80.0, 160.0, 320.0, 640.0, 1200.0, 2000.0, 3000.0, 4000.0 !

Reference Coordinates
of SOUTHWEST corner of
grid cell(1, 1):

X coordinate (XORIGKM) No default ! XORIGKM = 380.2200 !
Y coordinate (YORIGKM) No default ! YORIGKM = 6932.5520 !
Units: km

COMPUTATIONAL Grid:

The computational grid is identical to or a subset of the MET. grid.
The lower left (LL) corner of the computational grid is at grid point (IBCOMP, JBCOMP) of the MET. grid. The upper right (UR) corner of the computational grid is at grid point (IECOMP, JECOMP) of the MET. grid.
The grid spacing of the computational grid is the same as the MET. grid.

X index of LL corner (IBCOMP) No default ! IBCOMP = 22 !
(1 <= IBCOMP <= NX)

Y index of LL corner (JBCOMP) No default ! JBCOMP = 97 !
(1 <= JBCOMP <= NY)

X index of UR corner (IECOMP) No default ! IECOMP = 168 !
(1 <= IECOMP <= NX)

Y index of UR corner (JECOMP) No default ! JECOMP = 138 !
(1 <= JECOMP <= NY)

SAMPLING Grid (GRIDDED RECEPTORS):

The lower left (LL) corner of the sampling grid is at grid point (IBSAMP, JBSAMP) of the MET. grid. The upper right (UR) corner of the

```
    sampling grid is at grid point (IESAMP, JESAMP) of the MET. grid.
    The sampling grid must be identical to or a subset of the computational
    grid. It may be a nested grid inside the computational grid.
    The grid spacing of the sampling grid is DGRIDKM/MESHDN.

      Logical flag indicating if gridded
      receptors are used (LSAMP)        Default: T     ! LSAMP = F !
      (T=yes, F=no)

      X index of LL corner (IBSAMP)      No default     ! IBSAMP = 1 !
       (IBCOMP <= IBSAMP <= IECOMP)

      Y index of LL corner (JBSAMP)      No default     ! JBSAMP = 1 !
       (JBCOMP <= JBSAMP <= JECOMP)


      X index of UR corner (IESAMP)      No default     ! IESAMP = 2 !
       (IBCOMP <= IESAMP <= IECOMP)

      Y index of UR corner (JESAMP)      No default     ! JESAMP = 2 !
       (JBCOMP <= JESAMP <= JECOMP)


     Nesting factor of the sampling
      grid (MESHDN)                    Default: 1     ! MESHDN = 1 !
      (MESHDN is an integer >= 1)

!END!


--------------------------------------------------------------------------------


INPUT GROUP: 5 -- Output Options
--------------
                                    *                    *
    FILE                    DEFAULT VALUE            VALUE THIS RUN
    ----                    -------------            --------------

  Concentrations (ICON)            1                  ! ICON = 1 !
  Dry Fluxes (IDRY)               1                  ! IDRY = 1 !
  Wet Fluxes (IWET)               1                  ! IWET = 1 !
  2D Temperature (IT2D)            0                  ! IT2D = 0 !
  2D Density (IRHO)               0                  ! IRHO = 0 !
  Relative Humidity (IVIS)         1                  ! IVIS = 0 !
   (relative humidity file is
    required for visibility
    analysis)
  Use data compression option in output file?
  (LCOMPRS)                        Default: T        ! LCOMPRS = T !

  *
   0 = Do not create file, 1 = create file


   QA PLOT FILE OUTPUT OPTION:

     Create a standard series of output files (e.g.
     locations of sources, receptors, grids ...)
     suitable for plotting?
     (IQAPLOT)                    Default: 1        ! IQAPLOT = 1 !
       0 = no
       1 = yes

   DIAGNOSTIC PUFF-TRACKING OUTPUT OPTION:

     Puff locations and properties reported to
     PFTRAK.DAT file for postprocessing?
     (IPFTRAK)                    Default: 0        ! IPFTRAK = 0 !
       0 = no
       1 = yes, update puff output at end of each timestep
```

2 = yes, update puff output at end of each sampling step

DIAGNOSTIC MASS FLUX OUTPUT OPTIONS:

Mass flux across specified boundaries
for selected species reported?
(IMFLX) Default: 0 ! IMFLX = 0 !
0 = no
1 = yes (FLUXBDY.DAT and MASSFLX.DAT filenames
are specified in Input Group 0)

Mass balance for each species
reported?
(IMBAL) Default: 0 ! IMBAL = 0 !
0 = no
1 = yes (MASSBAL.DAT filename is
specified in Input Group 0)

NUMERICAL RISE OUTPUT OPTION:

Create a file with plume properties for each rise
increment, for each model timestep?
This applies to sources modeled with numerical rise
and is limited to ONE source in the run.
(INRISE) Default: 0 ! INRISE = 0 !
0 = no
1 = yes (RISE.DAT filename is
specified in Input Group 0)

LINE PRINTER OUTPUT OPTIONS:

Print concentrations (ICPRT) Default: 0 ! ICPRT = 0 !
Print dry fluxes (IDPRT) Default: 0 ! IDPRT = 0 !
Print wet fluxes (IWPRT) Default: 0 ! IWPRT = 0 !
(0 = Do not print, 1 = Print)

Concentration print interval
(ICFRQ) in timesteps Default: 1 ! ICFRQ = 1 !
Dry flux print interval
(IDFRQ) in timesteps Default: 1 ! IDFRQ = 1 !
Wet flux print interval
(IWFRQ) in timesteps Default: 1 ! IWFRQ = 1 !

Units for Line Printer Output
(IPRTU) Default: 1 ! IPRTU = 3 !

	for Concentration	for Deposition	
1 =	g/m**3	g/m**2/s	
2 =	mg/m**3	mg/m**2/s	
3 =	ug/m**3	ug/m**2/s	
4 =	ng/m**3	ng/m**2/s	
5 =	Odour Units		
6 =	TBq/m**3	TBq/m**2/s	TBq=terabecquerel
7 =	GBq/m**3	GBq/m**2/s	GBq=gigabecquerel
8 =	Bq/m**3	Bq/m**2/s	Bq=becquerel (disintegrations/s)

Messages tracking progress of run
written to the screen ?
(IMESG) Default: 2 ! IMESG = 2 !
0 = no
1 = yes (advection step, puff ID)
2 = yes (YYYYJJJHH, # old puffs, # emitted puffs)

SPECIES (or GROUP for combined species) LIST FOR OUTPUT OPTIONS

---- CONCENTRATIONS ---- ------ DRY FLUXES ------ ------ WET FLUXES ------ -- MASS FLUX --
SPECIES

```
  /GROUP       PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?   PRINTED?  SAVED ON DISK?
SAVED ON DISK?
  -------      ------------------------  ------------------------  ------------------------  ---------------
!         NOX =     1,         1,         0,         1,         0,         1,         0   !
!         TSP =     1,         1,         1,         1,         0,         1,         0   !
!        PM10 =     1,         1,         1,         1,         0,         1,         0   !
!       PM2.5 =     1,         1,         1,         1,         0,         1,         0   !
!          CO =     1,         1,         0,         1,         0,         1,         0   !
!         VOC =     1,         1,         0,         1,         0,         1,         0   !

 Note:  Species BCON (for MBCON > 0) does not need to be saved on disk.


    OPTIONS FOR PRINTING "DEBUG" QUANTITIES (much output)

      Logical for debug output
      (LDEBUG)                        Default: F     ! LDEBUG = F !

      First puff to track
      (IPFDEB)                        Default: 1     ! IPFDEB = 1 !

      Number of puffs to track
      (NPFDEB)                        Default: 1     ! NPFDEB = 1000 !

      Met. period to start output
      (NN1)                       Default: 1     ! NN1 = 1 !

      Met. period to end output
      (NN2)                       Default: 10    ! NN2 = 10 !

!END!


------------------------------------------------------------------------------


INPUT GROUP: 6a, 6b, & 6c -- Subgrid scale complex terrain inputs
-------------------------

---------------
Subgroup (6a)
---------------
      Number of terrain features (NHILL)       Default: 0     ! NHILL = 0 !

      Number of special complex terrain
      receptors  (NCTREC)                  Default: 0     ! NCTREC = 0 !

      Terrain and CTSG Receptor data for
      CTSG hills input in CTDM format ?
      (MHILL)                          No Default     ! MHILL = 2 !
      1 = Hill and Receptor data created
         by CTDM processors & read from
         HILL.DAT and HILLRCT.DAT files
      2 = Hill data created by OPTHILL &
         input below in Subgroup (6b);
         Receptor data in Subgroup (6c)

      Factor to convert horizontal dimensions  Default: 1.0   ! XHILL2M = 1.0 !
      to meters (MHILL=1)

      Factor to convert vertical dimensions    Default: 1.0   ! ZHILL2M = 1.0 !
      to meters (MHILL=1)

      X-origin of CTDM system relative to      No Default     ! XCTDMKM = 0.0 !
      CALPUFF coordinate system, in Kilometers (MHILL=1)

      Y-origin of CTDM system relative to      No Default     ! YCTDMKM = 0.0 !
      CALPUFF coordinate system, in Kilometers (MHILL=1)

! END !
```

Subgroup (6b)
---

1 **
HILL information

HILL NO.	XC (km)	YC (km)	THETAH (deg.)	ZGRID (m)	RELIEF (m)	EXPO 1 (m)	EXPO 2 (m)	SCALE 1 (m)	SCALE 2 (m)	AMAX1	AMAX2

Subgroup (6c)

COMPLEX TERRAIN RECEPTOR INFORMATION

XRCT (km)	YRCT (km)	ZRCT (m)	XHH

1
Description of Complex Terrain Variables:
XC, YC = Coordinates of center of hill
THETAH = Orientation of major axis of hill (clockwise from North)
ZGRID = Height of the 0 of the grid above mean sea level
RELIEF = Height of the crest of the hill above the grid elevation
EXPO 1 = Hill-shape exponent for the major axis
EXPO 2 = Hill-shape exponent for the major axis
SCALE 1 = Horizontal length scale along the major axis
SCALE 2 = Horizontal length scale along the minor axis
AMAX = Maximum allowed axis length for the major axis
BMAX = Maximum allowed axis length for the major axis

XRCT, YRCT = Coordinates of the complex terrain receptors
ZRCT = Height of the ground (MSL) at the complex terrain Receptor
XHH = Hill number associated with each complex terrain receptor (NOTE: MUST BE ENTERED AS A REAL NUMBER)

**
NOTE: DATA for each hill and CTSG receptor are treated as a separate input subgroup and therefore must end with an input group terminator.

INPUT GROUP: 7 -- Chemical parameters for dry deposition of gases
---

SPECIES NAME	DIFFUSIVITY (cm**2/s)	ALPHA STAR	REACTIVITY (s/cm)	MESOPHYLL RESISTANCE (dimensionless)	HENRY'S LAW COEFFICIENT
! NOX =	0.1656,	1,	8,	5,	3.5 !

!END!

INPUT GROUP: 8 -- Size parameters for dry deposition of particles

---

For SINGLE SPECIES, the mean and standard deviation are used to compute a deposition velocity for NINT (see group 9) size-ranges, and these are then averaged to obtain a mean deposition velocity.

For GROUPED SPECIES, the size distribution should be explicitly specified (by the 'species' in the group), and the standard deviation for each should be entered as 0. The model will then use the deposition velocity for the stated mean diameter.

SPECIES NAME	GEOMETRIC MASS MEAN DIAMETER (microns)	GEOMETRIC STANDARD DEVIATION (microns)
PM10 =	0.48,	2 !
PM2.5 =	0.48,	1.5 !
TSP =	0.48,	2 !

!END!

INPUT GROUP: 9 -- Miscellaneous dry deposition parameters

Reference cuticle resistance (s/cm)
(RCUTR) Default: 30 ! RCUTR = 30 !
Reference ground resistance (s/cm)
(RGR) Default: 10 ! RGR = 10 !
Reference pollutant reactivity
(REACTR) Default: 8 ! REACTR = 8 !

Number of particle-size intervals used to evaluate effective particle deposition velocity
(NINT) Default: 9 ! NINT = 9 !

Vegetation state in unirrigated areas
(IVEG) Default: 1 ! IVEG = 1 !
IVEG=1 for active and unstressed vegetation
IVEG=2 for active and stressed vegetation
IVEG=3 for inactive vegetation

!END!

INPUT GROUP: 10 -- Wet Deposition Parameters

Scavenging Coefficient -- Units: (sec)**(-1)

Pollutant	Liquid Precip.	Frozen Precip.
NOX =	0.00E00,	0.00E00 !
PM10 =	1.00E-04,	3.00E-05 !
PM2.5 =	1.00E-04,	3.00E-05 !
TSP =	1.00E-04,	3.00E-05 !

!END!

INPUT GROUP: 11a, 11b -- Chemistry Parameters

Subgroup (11a)

Several parameters are needed for one or more of the chemical transformation mechanisms. Those used for each mechanism are:

```
                                    S
                        M           B R O
                        A B R R R   C H 4 B     N
                    B   V C N N N M K - - C O   D
                    C M G K I I I H H I I K F V E
                  M K N N N T T T 2 2 S S P R C C
                  O O H H H E E E O O R R M A N A
Mechanism (MCHEM)      Z 3 3 3 3 1 2 3 2 2 P P F C X Y
--------------------   ------------------------------------------------
0 None                 . . . . . . . . . . . . . . .
1 MESOPUFF II            X X . . X X X X . . . . . . . .
2 User Rates             . . . . . . . . . . . . . . .
3 RIVAD                 X X . . X . . . . . . . . . .
4 SOA                  X X . . . . . . . . . X X X .
5 Radioactive Decay      . . . . . . . . . . . . . . X
6 RIVAD/ISORRPIA        X X X X X X . . X X X X . . . .
7 RIVAD/ISORRPIA/SOA    X X X X X X . . X X X X X X . .
```

Ozone data input option (MOZ) Default: 1 ! MOZ = 1 !
(Used only if MCHEM = 1,3,4,6 or 7)
0 = use a monthly background ozone value
1 = read hourly ozone concentrations from
the OZONE.DAT data file

Monthly ozone concentrations in ppb (BCKO3)
(Used only if MCHEM = 1,3,4,6, or 7 and either
MOZ = 0, or
MOZ = 1 and all hourly O3 data missing)
Default: 12*80.
! BCKO3 = 80.00, 80.00, 80.00, 80.00, 80.00, 80.00, 80.00, 80.00, 80.00, 80.00, 80.00, 80.00 !

Ammonia data option (MNH3) Default: 0 ! MNH3 = 0 !
(Used only if MCHEM = 6 or 7)
0 = use monthly background ammonia values (BCKNH3) - no vertical variation
1 = read monthly background ammonia values for each layer from
the NH3Z.DAT data file

Ammonia vertical averaging option (MAVGNH3)
(Used only if MCHEM = 6 or 7, and MNH3 = 1)
0 = use NH3 at puff center height (no averaging is done)
1 = average NH3 values over vertical extent of puff
Default: 1 ! MAVGNH3 = 1 !

Monthly ammonia concentrations in ppb (BCKNH3)
(Used only if MCHEM = 1 or 3, or
if MCHEM = 6 or 7, and MNH3 = 0)
Default: 12*10.
! BCKNH3 = 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00, 10.00 !

Nighttime SO2 loss rate in %/hour (RNITE1)
(Used only if MCHEM = 1, 6 or 7)
This rate is used only at night for MCHEM=1
and is added to the computed rate both day
and night for MCHEM=6,7 (heterogeneous reactions)
Default: 0.2 ! RNITE1 = 0.2 !

Nighttime NOx loss rate in %/hour (RNITE2)
(Used only if MCHEM = 1)
Default: 2.0 ! RNITE2 = 2 !

Nighttime HNO3 formation rate in %/hour (RNITE3)
(Used only if MCHEM = 1)

```
                        Default: 2.0        ! RNITE3 = 2 !

  H2O2 data input option (MH2O2)    Default: 1          ! MH2O2 = 1 !
  (Used only if MCHEM = 6 or 7, and MAQCHEM = 1)
    0 = use a monthly background H2O2 value
    1 = read hourly H2O2 concentrations from
      the H2O2.DAT data file

  Monthly H2O2 concentrations in ppb (BCKH2O2)
  (Used only if MQACHEM = 1 and either
    MH2O2 = 0 or
    MH2O2 = 1 and all hourly H2O2 data missing)
                        Default: 12*1.
  ! BCKH2O2 = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00 !

--- Data for ISORROPIA Option
  (used only if MCHEM = 6 or 7)

  Minimum relative humidity used in ISORROPIA computations (RH_ISRP)
                        Default: 50.        ! RH_ISRP = 50.0 !
                        Units: %

  Minimum SO4 used in ISORROPIA computations (SO4_ISRP)
                        Default: 0.4        ! SO4_ISRP = 0.4 !
                        Units: ug/m3

 --- Data for SECONDARY ORGANIC AEROSOL (SOA) Options
  (used only if MCHEM = 4 or 7)

  The MCHEM = 4 SOA module uses monthly values of:
      Fine particulate concentration in ug/m^3 (BCKPMF)
      Organic fraction of fine particulate     (OFRAC)
      VOC / NOX ratio (after reaction)         (VCNX)

  The MCHEM = 7 SOA module uses monthly values of:
      Fine particulate concentration in ug/m^3 (BCKPMF)
      Organic fraction of fine particulate     (OFRAC)

  These characterize the air mass when computing
  the formation of SOA from VOC emissions.
  Typical values for several distinct air mass types are:

    Month    1    2    3    4    5    6    7    8    9   10   11   12
          Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec

  Clean Continental
    BCKPMF   1.  1.  1.  1.  1.  1.  1.  1.  1.  1.  1.  1.
    OFRAC  .15 .15 .20 .20 .20 .20 .20 .20 .20 .20 .20 .15
    VCNX    50. 50. 50. 50. 50. 50. 50. 50. 50. 50. 50. 50.

  Clean Marine (surface)
    BCKPMF  .5  .5  .5  .5  .5  .5  .5  .5  .5  .5  .5  .5
    OFRAC  .25 .25 .30 .30 .30 .30 .30 .30 .30 .30 .30 .25
    VCNX    50. 50. 50. 50. 50. 50. 50. 50. 50. 50. 50. 50.

  Urban - low biogenic (controls present)
    BCKPMF  30. 30. 30. 30. 30. 30. 30. 30. 30. 30. 30. 30.
    OFRAC  .20 .20 .25 .25 .25 .25 .25 .25 .20 .20 .20 .20
    VCNX     4.  4.  4.  4.  4.  4.  4.  4.  4.  4.  4.  4.

  Urban - high biogenic (controls present)
    BCKPMF  60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60. 60.
    OFRAC  .25 .25 .30 .30 .30 .55 .55 .55 .35 .35 .35 .25
    VCNX    15. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15.

  Regional Plume
    BCKPMF  20. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20. 20.
    OFRAC  .20 .20 .25 .35 .25 .40 .40 .40 .30 .30 .30 .20
    VCNX    15. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15. 15.

  Urban - no controls present
```

BCKPMF 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100. 100.
OFRAC .30 .30 .35 .35 .35 .55 .55 .55 .35 .35 .35 .30
VCNX 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.

Default: Clean Continental
! BCKPMF = 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00, 1.00 !
! OFRAC = 0.15, 0.15, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.20, 0.15 !
! VCNX = 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00, 50.00 !

--- End Data for SECONDARY ORGANIC AEROSOL (SOA) Options

Number of half-life decay specification blocks provided in Subgroup 11b
(Used only if MCHEM = 5)
(NDECAY) Default: 0 ! NDECAY = 0 !

!END!

Subgroup (11b)

Each species modeled may be assigned a decay half-life (sec), and the associated mass lost may be assigned to one or more other modeled species using a mass yield factor. This information is used only for MCHEM=5.

Provide NDECAY blocks assigning the half-life for a parent species and mass yield factors for each child species (if any) produced by the decay.
Set HALF_LIFE=0.0 for NO decay (infinite half-life).

	a	b
SPECIES NAME	Half-Life (sec)	Mass Yield Factor
---	---	---

* SPECHLLIST = *

---
a
Specify a half life that is greater than or equal to zero for 1 parent species in each block, and set the yield factor for this species to -1
b
Specify a yield factor that is greater than or equal to zero for 1 or more child species in each block, and set the half-life for each of these species to -1

NOTE: Assignments in each block are treated as a separate input subgroup and therefore must end with an input group terminator.
If NDECAY=0, no assignments and input group terminators should appear.

INPUT GROUP: 12 -- Misc. Dispersion and Computational Parameters
---

Horizontal size of puff (m) beyond which
time-dependent dispersion equations (Heffter)
are used to determine sigma-y and
sigma-z (SYTDEP) Default: 550. ! SYTDEP = 550 !

Switch for using Heffter equation for sigma z
as above (0 = Not use Heffter; 1 = use Heffter
(MHFTSZ) Default: 0 ! MHFTSZ = 0 !

Stability class used to determine plume
growth rates for puffs above the boundary
layer (JSUP) Default: 5 ! JSUP = 5 !

Vertical dispersion constant for stable
conditions (k1 in Eqn. 2.7-3) (CONK1) Default: 0.01 ! CONK1 = 0.01 !

Vertical dispersion constant for neutral/
unstable conditions (k2 in Eqn. 2.7-4)
(CONK2) Default: 0.1 ! CONK2 = 0.1 !

Factor for determining Transition-point from
Schulman-Scire to Huber-Snyder Building Downwash
scheme (SS used for Hs <Hb + TBD * HL)
(TBD) Default: 0.5 ! TBD = 0.5 !
TBD <0 ==> always use Huber-Snyder
TBD = 1.5 ==> always use Schulman-Scire
TBD = 0.5 ==> ISC Transition-point

Range of land use categories for which
urban dispersion is assumed
(IURB1, IURB2) Default: 10 ! IURB1 = 10 !
19 ! IURB2 = 19 !

Site characterization parameters for single-point Met data files ---------
(needed for METFM = 2,3,4,5)

Land use category for modeling domain
(ILANDUIN) Default: 20 ! ILANDUIN = 20 !

Roughness length (m) for modeling domain
(Z0IN) Default: 0.25 ! Z0IN = .25 !

Leaf area index for modeling domain
(XLAIIN) Default: 3.0 ! XLAIIN = 3.0 !

Elevation above sea level (m)
(ELEVIN) Default: 0.0 ! ELEVIN = .0 !

Latitude (degrees) for met location
(XLATIN) Default: -999. ! XLATIN = -999.0 !

Longitude (degrees) for met location
(XLONIN) Default: -999. ! XLONIN = -999.0 !

Specialized information for interpreting single-point Met data files -----

Anemometer height (m) (Used only if METFM = 2,3)
(ANEMHT) Default: 10. ! ANEMHT = 10.0 !

Form of lateral turbulance data in PROFILE.DAT file
(Used only if METFM = 4,5 or MTURBVW = 1 or 3)
(ISIGMAV) Default: 1 ! ISIGMAV = 1 !
0 = read sigma-theta
1 = read sigma-v

Choice of mixing heights (Used only if METFM = 4)
(IMIXCTDM) Default: 0 ! IMIXCTDM = 0 !
0 = read PREDICTED mixing heights
1 = read OBSERVED mixing heights

Maximum length of a slug (met. grid units)
(XMXLEN) Default: 1.0 ! XMXLEN = 1 !

Maximum travel distance of a puff/slug (in
grid units) during one sampling step
(XSAMLEN) Default: 1.0 ! XSAMLEN = 1 !

Maximum Number of slugs/puffs release from
one source during one time step
(MXNEW) Default: 99 ! MXNEW = 99 !

Maximum Number of sampling steps for
one puff/slug during one time step
(MXSAM) Default: 99 ! MXSAM = 99 !

Number of iterations used when computing
the transport wind for a sampling step

```
that includes gradual rise (for CALMET
and PROFILE winds)
(NCOUNT)                        Default: 2      ! NCOUNT = 2 !

Minimum sigma y for a new puff/slug (m)
(SYMIN)                         Default: 1.0    ! SYMIN = 1 !

Minimum sigma z for a new puff/slug (m)
(SZMIN)                         Default: 1.0    ! SZMIN = 1 !

Maximum sigma z (m) allowed to avoid
numerical problem in calculating virtual
time or distance. Cap should be large
enough to have no influence on normal events.
Enter a negative cap to disable.
(SZCAP_M)                       Default: 5.0e06 ! SZCAP_M = 5000000 !

Default minimum turbulence velocities sigma-v and sigma-w
for each stability class over land and over water (m/s)
(SVMIN(12) and SWMIN(12))

             ----------  LAND  ----------       ---------  WATER  ----------
   Stab Class :  A    B    C    D    E    F         A    B    C    D    E    F
              ---  ---  ---  ---  ---  ---       ---  ---  ---  ---  ---  ---
Default SVMIN : .50, .50, .50, .50, .50, .50,      .37, .37, .37, .37, .37, .37
Default SWMIN : .20, .12, .08, .06, .03, .016,     .20, .12, .08, .06, .03, .016

     ! SVMIN = 0.5, 0.5, 0.5, 0.5, 0.5, 0.5, 0.37, 0.37, 0.37, 0.37, 0.37, 0.37 !
     ! SWMIN = 0.2, 0.12, 0.08, 0.06, 0.03, 0.016, 0.2, 0.12, 0.08, 0.06, 0.03, 0.016 !

Divergence criterion for dw/dz across puff
used to initiate adjustment for horizontal
convergence (1/s)
Partial adjustment starts at CDIV(1), and
full adjustment is reached at CDIV(2)
(CDIV(2))                       Default: 0.0,0.0  ! CDIV = 0, 0 !

Search radius (number of cells) for nearest
land and water cells used in the subgrid
TIBL module
(NLUTIBL)                       Default: 4      ! NLUTIBL = 4 !

Minimum wind speed (m/s) allowed for
non-calm conditions. Also used as minimum
speed returned when using power-law
extrapolation toward surface
(WSCALM)                        Default: 0.5    ! WSCALM = 0.5 !

Maximum mixing height (m)
(XMAXZI)                        Default: 3000. ! XMAXZI = 3000 !

Minimum mixing height (m)
(XMINZI)                        Default: 50.   ! XMINZI = 50 !


Temperatures (K) used for defining upper bound of
categories for emissions scale-factors
11 upper bounds (K) are entered; the 12th class has no upper limit
(TKCAT(11))
          Default   : 265., 270., 275., 280., 285., 290., 295., 300., 305., 310., 315. (315.+)
                    <<    <<    <<    <<    <<    <Temperature Class :  1    2    3    4    5    6    7    8    9    10   11
(12)
                   ----  ----  ----  ----  ----  ----  ----  ----  ----  ----  ----
          ! TKCAT = 265., 270., 275., 280., 285., 290., 295., 300., 305., 310., 315. !

Default wind speed profile power-law
exponents for stabilities 1-6
(PLX0(6))                 Default   : ISC RURAL values
                        ISC RURAL : .07, .07, .10, .15, .35, .55
                        ISC URBAN : .15, .15, .20, .25, .30, .30
```

Stability Class : A B C D E F
--- --- --- --- --- ---
! PLX0 = 0.07, 0.07, 0.1, 0.15, 0.35, 0.55 !

Default potential temperature gradient
for stable classes E, F (degK/m)
(PTG0(2)) Default: 0.020, 0.035
! PTG0 = 0.02, 0.035 !

Default plume path coefficients for
each stability class (used when option
for partial plume height terrain adjustment
is selected -- MCTADJ=3)
(PPC(6)) Stability Class : A B C D E F
Default PPC : .50, .50, .50, .50, .35, .35
--- --- --- --- --- ---
! PPC = 0.5, 0.5, 0.5, 0.5, 0.35, 0.35 !

Slug-to-puff transition criterion factor
equal to sigma-y/length of slug
(SL2PF) Default: 10. ! SL2PF = 10 !

Receptor-specific puff/slug properties (e.g., sigmas and height above
ground at the time when the trajectory is nearest the receptor) may be
extrapolated forward or backward in time along the current step using
the current dispersion, for receptors that lie upwind of the puff/slug
position at the start of a step, or downwind at the end of a step.
Specify the upwind/downwind extrapolation zone in sigma-y units.
Using FCLIP=1.0 clips the the upwind zone at one sigma-y at the start
of the step and the downwind zone at one sigma-y at the end of the step.
This is consistent with the sampling done in CALPUFF versions through
v6.42 prior to the introduction of the FCLIP option.
The default is No Extrapolation, FCLIP=0.0.
(FCLIP) Default: 0.0 ! FCLIP = 0 !

Puff-splitting control variables ----------

VERTICAL SPLIT

Number of puffs that result every time a puff
is split - nsplit=2 means that 1 puff splits
into 2
(NSPLIT) Default: 3 ! NSPLIT = 3 !

Time(s) of a day when split puffs are eligible to
be split once again; this is typically set once
per day, around sunset before nocturnal shear develops.
24 values: 0 is midnight (00:00) and 23 is 11 PM (23:00)
0=do not re-split 1=eligible for re-split
(IRESPLIT(24)) Default: Hour 17 = 1
! IRESPLIT = 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,1,0,0,0,0,0,0 !

Split is allowed only if last hour's mixing
height (m) exceeds a minimum value
(ZISPLIT) Default: 100. ! ZISPLIT = 100 !

Split is allowed only if ratio of last hour's
mixing ht to the maximum mixing ht experienced
by the puff is less than a maximum value (this
postpones a split until a nocturnal layer develops)
(ROLDMAX) Default: 0.25 ! ROLDMAX = 0.25 !

HORIZONTAL SPLIT

Number of puffs that result every time a puff
is split - nsplith=5 means that 1 puff splits
into 5
(NSPLITH) Default: 5 ! NSPLITH = 5 !

```
      Minimum sigma-y (Grid Cells Units) of puff
      before it may be split
      (SYSPLITH)                    Default:  1.0       ! SYSPLITH = 1 !

      Minimum puff elongation rate (SYSPLITH/hr) due to
      wind shear, before it may be split
      (SHSPLITH)                    Default:  2.        ! SHSPLITH = 2 !

      Minimum concentration (g/m^3) of each
      species in puff before it may be split
      Enter array of NSPEC values; if a single value is
      entered, it will be used for ALL species
      (CNSPLITH)                    Default:  1.0E-07   ! CNSPLITH = 0 !

    Integration control variables ------------------------

      Fractional convergence criterion for numerical SLUG
      sampling integration
      (EPSSLUG)                     Default:   1.0e-04  ! EPSSLUG = 0.0001 !

      Fractional convergence criterion for numerical AREA
      source integration
      (EPSAREA)                     Default:   1.0e-06  ! EPSAREA = 1E-006 !

      Trajectory step-length (m) used for numerical rise
      integration
      (DSRISE)                      Default:   1.0      ! DSRISE = 1.0 !

      Boundary Condition (BC) Puff control variables -------------------------

      Minimum height (m) to which BC puffs are mixed as they are emitted
      (MBCON=2 ONLY). Actual height is reset to the current mixing height
      at the release point if greater than this minimum.
      (HTMINBC)                     Default:   500.    ! HTMINBC = 500 !

      Search radius (km) about a receptor for sampling nearest BC puff.
      BC puffs are typically emitted with a spacing of one grid cell
      length, so the search radius should be greater than DGRIDKM.
      (RSAMPBC)                     Default:   10.     ! RSAMPBC = 10 !

      Near-Surface depletion adjustment to concentration profile used when
      sampling BC puffs?
      (MDEPBC)                      Default:   1       ! MDEPBC = 1 !
        0 = Concentration is NOT adjusted for depletion
        1 = Adjust Concentration for depletion

!END!


--------------------------------------------------------------------------------


INPUT GROUPS: 13a, 13b, 13c, 13d -- Point source parameters
---------------------------------

---------------
Subgroup (13a)
---------------

    Number of point sources with
    parameters provided below      (NPT1)  No default  ! NPT1 = 0 !

    Units used for point source
    emissions below               (IPTU)  Default: 1  ! IPTU = 1 !
        1 =       g/s
        2 =      kg/hr
        3 =      lb/hr
        4 =     tons/yr
        5 =     Odour Unit * m**3/s  (vol. flux of odour compound)
        6 =     Odour Unit * m**3/min
```

7 = metric tons/yr
8 = Bq/s (Bq = becquerel = disintegrations/s)
9 = GBq/yr

Number of source-species
combinations with variable
emissions scaling factors
provided below in (13d) (NSPT1) Default: 0 ! NSPT1 = 0 !

Number of point sources with
variable emission parameters
provided in external file (NPT2) No default ! NPT2 = 0 !

(If NPT2 > 0, these point
source emissions are read from
the file: PTEMARB.DAT)

!END!

Subgroup (13b)
---

a
POINT SOURCE: CONSTANT DATA

Source No.	X Coordinate (km)	Y Coordinate (km)	Stack Height (m)	Base Elevation (m)	Stack Diameter (m)	Exit Vel. (m/s)	Exit Temp. (deg. K)	Bldg. Dwash b	Emission Rates c
------	----------	----------	------	------	--------	-----	--------	-----	--------

---

a
Data for each source are treated as a separate input subgroup
and therefore must end with an input group terminator.

SRCNAM is a 12-character name for a source
(No default)
X is an array holding the source data listed by the column headings
(No default)
SIGYZI is an array holding the initial sigma-y and sigma-z (m)
(Default: 0.,0.)
FMFAC is a vertical momentum flux factor (0. or 1.0) used to represent
the effect of rain-caps or other physical configurations that
reduce momentum rise associated with the actual exit velocity.
(Default: 1.0 -- full momentum used)
ZPLTFM is the platform height (m) for sources influenced by an isolated
structure that has a significant open area between the surface
and the bulk of the structure, such as an offshore oil platform.
The Base Elevation is that of the surface (ground or ocean),
and the Stack Height is the release height above the Base (not
above the platform). Building heights entered in Subgroup 13c
must be those of the buildings on the platform, measured from
the platform deck. ZPLTFM is used only with MBDW=1 (ISC
downwash method) for sources with building downwash.
(Default: 0.0)

b
0. = No building downwash modeled
1. = Downwash modeled for buildings resting on the surface
2. = Downwash modeled for buildings raised above the surface (ZPLTFM > 0.)
NOTE: must be entered as a REAL number (i.e., with decimal point)

c
An emission rate must be entered for every pollutant modeled.
Enter emission rate of zero for secondary pollutants that are
modeled, but not emitted. Units are specified by IPTU
(e.g. 1 for g/s).

Subgroup (13c)

BUILDING DIMENSION DATA FOR SOURCES SUBJECT TO DOWNWASH

Source a
No. Effective building height, width, length and X/Y offset (in meters)
every 10 degrees. LENGTH, XBADJ, and YBADJ are only needed for
MBDW=2 (PRIME downwash option)
------ ---

---

a
Building height, width, length, and X/Y offset from the source are treated
as a separate input subgroup for each source and therefore must end with
an input group terminator. The X/Y offset is the position, relative to the
stack, of the center of the upwind face of the projected building, with the
x-axis pointing along the flow direction.

Subgroup (13d)
---

a
POINT SOURCE: EMISSION-RATE SCALING FACTORS

Use this subgroup to identify temporal variations in the emission
rates given in 13b. Factors assigned multiply the rates in 13b.
Skip sources here that have constant emissions. For more elaborate
variation in source parameters, use PTEMARB.DAT and NPT2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and
are referenced by the FACTORNAME. Provide NSPT1 lines that identify the
emission-rate scale factor table for each source-species combination that
uses the scaling option. Note that a scale-factor table can be used with
more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name b (SRCNAM)	Species Name c (CSPEC)	Scale-factor table Name d (FACTORNAME)
------	----------	----------	----------

---
a
Assignment for each source-specie is treated as a separate input subgroup
and therefore must end with an input group terminator.
b
Source name must match one of the SRCNAM names defined in Input Group 13b
c
Species name must match one of the CSPEC names of emitted species defined in Input Group 3
d
Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

INPUT GROUPS: 14a, 14b, 14c, 14d -- Area source parameters

Subgroup (14a)

Number of polygon area sources with
parameters specified below (NAR1) No default ! NAR1 = 0 !

Units used for area source
emissions below (IARU) Default: 1 ! IARU = 1 !
1 = g/m**2/s
2 = kg/m**2/hr
3 = lb/m**2/hr
4 = tons/m**2/yr
5 = Odour Unit * m/s (vol. flux/m**2 of odour compound)
6 = Odour Unit * m/min
7 = metric tons/m**2/yr
8 = Bq/m**2/s (Bq = becquerel = disintegrations/s)
9 = GBq/m**2/yr

Number of source-species
combinations with variable
emissions scaling factors
provided below in (14d) (NSAR1) Default: 0 ! NSAR1 = 0 !

Number of buoyant polygon area sources
with variable location and emission
parameters (NAR2) No default ! NAR2 = 0 !
(If NAR2 > 0, ALL parameter data for
these sources are read from the file: BAEMARB.DAT)

!END!

Subgroup (14b)
---

a
AREA SOURCE: CONSTANT DATA
---

b

Source No.	Effect. Height (m)	Base Elevation (m)	Initial Sigma z (m)	Emission Rates
-------	------	------	--------	---------

---
a
Data for each source are treated as a separate input subgroup
and therefore must end with an input group terminator.
b
An emission rate must be entered for every pollutant modeled.
Enter emission rate of zero for secondary pollutants that are
modeled, but not emitted. Units are specified by IARU
(e.g. 1 for g/m**2/s).

Subgroup (14c)

COORDINATES (km) FOR EACH VERTEX(4) OF EACH POLYGON
---

a

Source No.	Ordered list of X followed by list of Y, grouped by source
------	----------

---
a
Data for each source are treated as a separate input subgroup
and therefore must end with an input group terminator.

Subgroup (14d)
---

a
AREA SOURCE: EMISSION-RATE SCALING FACTORS

Use this subgroup to identify temporal variations in the emission
rates given in 14b. Factors assigned multiply the rates in 14b.
Skip sources here that have constant emissions. For more elaborate
variation in source parameters, use BAEMARB.DAT and NAR2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and
are referenced by the FACTORNAME. Provide NSAR1 lines that identify the
emission-rate scale factor table for each source-species combination that
uses the scaling option. Note that a scale-factor table can be used with
more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name b (SRCNAM)	Species Name c (CSPEC)	Scale-factor table Name d (FACTORNAME)
------	----------	----------	----------

---

a
Data for each species are treated as a separate input subgroup
and therefore must end with an input group terminator.

b
Source name must match one of the SRCNAM names defined in Input Group 14b

c
Species name must match one of the CSPEC names of emitted species defined in Input Group 3

d
Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

INPUT GROUPS: 15a, 15b, 15c -- Line source parameters

Subgroup (15a)

Number of buoyant line sources
with variable location and emission
parameters (NLN2) No default ! NLN2 = 0 !

(If NLN2 > 0, ALL parameter data for
these sources are read from the file: LNEMARB.DAT)

Number of buoyant line sources (NLINES) No default ! NLINES = 0 !

Units used for line source
emissions below (ILNU) Default: 1 ! ILNU = 1 !
1 = g/s
2 = kg/hr
3 = lb/hr
4 = tons/yr
5 = Odour Unit * m**3/s (vol. flux of odour compound)
6 = Odour Unit * m**3/min
7 = metric tons/yr
8 = Bq/s (Bq = becquerel = disintegrations/s)
9 = GBq/yr

Number of source-species
combinations with variable
emissions scaling factors
provided below in (15c) (NSLN1) Default: 0 ! NSLN1 = 0 !

Maximum number of segments used to model
each line (MXNSEG) Default: 7 ! MXNSEG = 7 !

The following variables are required only if NLINES > 0. They are

used in the buoyant line source plume rise calculations.

Number of distances at which transitional rise is computed — Default: 6 ! NLRISE = 6 !

Average building length (XL) (in meters) — No default * XL = *

Average building height (HBL) (in meters) — No default * HBL = *

Average building width (WBL) (in meters) — No default * WBL = *

Average line source width (WML) (in meters) — No default * WML = *

Average separation between buildings (DXL) (in meters) — No default * DXL = *

Average buoyancy parameter (FPRIMEL) (in m**4/s**3) — No default * FPRIMEL = *

!END!

Subgroup (15b)

BUOYANT LINE SOURCE: CONSTANT DATA

Source No.	Beg. X Coordinate (km)	Beg. Y Coordinate (km)	End. X Coordinate (km)	End. Y Coordinate (km)	Release Height[a] (m)	Base Elevation (m)	Emission Rates

---

a
Data for each source are treated as a separate input subgroup and therefore must end with an input group terminator.

b
An emission rate must be entered for every pollutant modeled. Enter emission rate of zero for secondary pollutants that are modeled, but not emitted. Units are specified by ILNTU (e.g. 1 for g/s).

Subgroup (15c)

BUOYANT LINE SOURCE: EMISSION-RATE SCALING FACTORS[a]

Use this subgroup to identify temporal variations in the emission rates given in 15b. Factors assigned multiply the rates in 15b. Skip sources here that have constant emissions. For more elaborate variation in source parameters, use LNEMARB.DAT and NLN2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and are referenced by the FACTORNAME. Provide NSLN1 lines that identify the emission-rate scale factor table for each source-species combination that uses the scaling option. Note that a scale-factor table can be used with more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name[b] (SRCNAM)	Species Name[c] (CSPEC)	Scale-factor table Name[d] (FACTORNAME)

```
  ------            ------------ ------------ ---------------------


--------
    a
     Data for each species are treated as a separate input subgroup
     and therefore must end with an input group terminator.
    b
     Source name must match one of the SRCNAM names defined in Input Group 15b
    c
     Species name must match one of the CSPEC names of emitted species defined in Input Group 3
    d
     Scale-factor name must match one of the FACTORNAME names defined in Input Group 19


-------------------------------------------------------------------------------


INPUT GROUPS: 16a, 16b, 16c -- Volume source parameters
---------------------------

---------------
Subgroup (16a)
---------------

     Number of volume sources with
     parameters provided in 16b,c (NVL1)     No default  ! NVL1 = 167 !

     Units used for volume source
     emissions below in 16b       (IVLU)     Default: 1  ! IVLU = 1 !
          1 =       g/s
          2 =      kg/hr
          3 =      lb/hr
          4 =    tons/yr
          5 =    Odour Unit * m**3/s  (vol. flux of odour compound)
          6 =    Odour Unit * m**3/min
          7 =    metric tons/yr
          8 =    Bq/s  (Bq = becquerel = disintegrations/s)
          9 =    GBq/yr

     Number of source-species
     combinations with variable
     emissions scaling factors
     provided below in (16c)      (NSVL1)    Default: 0  ! NSVL1 = 0 !

     Number of volume sources with
     variable location and emission
     parameters                  (NVL2)     No default  ! NVL2 = 0 !

     (If NVL2 > 0, ALL parameter data for
      these sources are read from the VOLEMARB.DAT file(s) )

!END!

---------------
Subgroup (16b)
---------------
                                  a
          VOLUME SOURCE: CONSTANT DATA
          ------------------------------
                                                          b
Source        X          Y        Effect.   Base     Initial    Initial    Emission
 No.      Coordinate  Coordinate   Height   Elevation  Sigma y    Sigma z     Rates
            (km)       (km)        (m)       (m)        (m)       (m)
------     ----------  ----------   ------    ------    --------   --------   --------

   1 ! SRCNAM = ALIGNMENT1_1 !
   1 ! X =  386.406, 6958.276,    3.31,   459.72,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
   2 ! SRCNAM = ALIGNMENT1_2 !
```

```
  2 ! X =  386.423, 6958.270,   3.31,  459.78,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
  3 ! SRCNAM = ALIGNMENT1_3 !
  3 ! X =  386.439, 6958.263,   3.31,  459.83,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
  4 ! SRCNAM = ALIGNMENT1_4 !
  4 ! X =  386.456, 6958.257,   3.31,  459.88,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
  5 ! SRCNAM = ALIGNMENT1_5 !
  5 ! X =  386.473, 6958.250,   3.31,  459.94,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
  6 ! SRCNAM = ALIGNMENT1_6 !
  6 ! X =  386.490, 6958.244,   3.31,  459.99,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
  7 ! SRCNAM = ALIGNMENT1_7 !
  7 ! X =  386.506, 6958.238,   3.31,  460.05,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
  8 ! SRCNAM = ALIGNMENT1_8 !
  8 ! X =  386.523, 6958.232,   3.31,  460.11,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
  9 ! SRCNAM = ALIGNMENT1_9 !
  9 ! X =  386.540, 6958.225,   3.31,  460.16,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 10 ! SRCNAM = ALIGNMENT1_10 !
 10 ! X =  386.556, 6958.218,   3.31,  460.22,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 11 ! SRCNAM = ALIGNMENT1_11 !
 11 ! X =  386.573, 6958.212,   3.31,  460.27,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 12 ! SRCNAM = ALIGNMENT1_12 !
 12 ! X =  386.589, 6958.205,   3.31,  460.33,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 13 ! SRCNAM = ALIGNMENT1_13 !
 13 ! X =  386.606, 6958.197,   3.31,  460.38,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 14 ! SRCNAM = ALIGNMENT1_14 !
 14 ! X =  386.622, 6958.190,   3.31,  460.44,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 15 ! SRCNAM = ALIGNMENT1_15 !
 15 ! X =  386.638, 6958.182,   3.31,   460.5,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 16 ! SRCNAM = ALIGNMENT1_16 !
 16 ! X =  386.655, 6958.175,   3.31,  460.59,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 17 ! SRCNAM = ALIGNMENT1_17 !
 17 ! X =  386.671, 6958.168,   3.31,  460.67,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 18 ! SRCNAM = ALIGNMENT1_18 !
 18 ! X =  386.687, 6958.160,   3.31,  460.76,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 19 ! SRCNAM = ALIGNMENT1_19 !
 19 ! X =  386.703, 6958.152,   3.31,  460.84,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
```

```
 20 ! SRCNAM = ALIGNMENT1_20 !
 20 ! X =  386.719, 6958.144,   3.31,   460.93,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 21 ! SRCNAM = ALIGNMENT1_21 !
 21 ! X =  386.736, 6958.137,   3.31,   461.02,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 22 ! SRCNAM = ALIGNMENT1_22 !
 22 ! X =  386.752, 6958.129,   3.31,    461.1,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 23 ! SRCNAM = ALIGNMENT1_23 !
 23 ! X =  386.768, 6958.122,   3.31,   461.19,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 24 ! SRCNAM = ALIGNMENT1_24 !
 24 ! X =  386.784, 6958.114,   3.31,   461.27,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 25 ! SRCNAM = ALIGNMENT1_25 !
 25 ! X =  386.800, 6958.106,   3.31,   461.36,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 26 ! SRCNAM = ALIGNMENT1_26 !
 26 ! X =  386.817, 6958.099,   3.31,   461.44,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 27 ! SRCNAM = ALIGNMENT1_27 !
 27 ! X =  386.833, 6958.091,   3.31,   461.53,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 28 ! SRCNAM = ALIGNMENT1_28 !
 28 ! X =  386.849, 6958.084,   3.31,   461.62,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 29 ! SRCNAM = ALIGNMENT1_29 !
 29 ! X =  386.865, 6958.076,   3.31,    461.7,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 30 ! SRCNAM = ALIGNMENT1_30 !
 30 ! X =  386.881, 6958.068,   3.31,   461.79,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 31 ! SRCNAM = ALIGNMENT1_31 !
 31 ! X =  386.898, 6958.060,   3.31,   461.87,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 32 ! SRCNAM = ALIGNMENT1_32 !
 32 ! X =  386.914, 6958.053,   3.31,   461.96,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 33 ! SRCNAM = ALIGNMENT1_33 !
 33 ! X =  386.930, 6958.045,   3.31,   462.05,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 34 ! SRCNAM = ALIGNMENT1_34 !
 34 ! X =  386.946, 6958.038,   3.31,   462.13,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 35 ! SRCNAM = ALIGNMENT1_35 !
 35 ! X =  386.962, 6958.030,   3.31,   462.22,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 36 ! SRCNAM = ALIGNMENT1_36 !
 36 ! X =  386.979, 6958.023,   3.31,    462.3,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 37 ! SRCNAM = ALIGNMENT1_37 !
 37 ! X =  386.995, 6958.016,   3.31,   462.39,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
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!END!
 38 ! SRCNAM = ALIGNMENT1_38 !
 38 ! X =  387.012, 6958.010,   3.31,  462.47,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 39 ! SRCNAM = ALIGNMENT1_39 !
 39 ! X =  387.029, 6958.003,   3.31,  462.56,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 40 ! SRCNAM = ALIGNMENT1_40 !
 40 ! X =  387.046, 6957.997,   3.31,  462.65,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 41 ! SRCNAM = ALIGNMENT1_41 !
 41 ! X =  387.062, 6957.991,   3.31,  462.73,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 42 ! SRCNAM = ALIGNMENT1_42 !
 42 ! X =  387.079, 6957.986,   3.31,  462.82,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 43 ! SRCNAM = ALIGNMENT1_43 !
 43 ! X =  387.096, 6957.980,   3.31,   462.9,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 44 ! SRCNAM = ALIGNMENT1_44 !
 44 ! X =  387.114, 6957.975,   3.31,  462.99,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 45 ! SRCNAM = ALIGNMENT1_45 !
 45 ! X =  387.131, 6957.970,   3.31,  463.07,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 46 ! SRCNAM = ALIGNMENT1_46 !
 46 ! X =  387.148, 6957.966,   3.31,  463.16,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 47 ! SRCNAM = ALIGNMENT1_47 !
 47 ! X =  387.165, 6957.961,   3.31,  463.25,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 48 ! SRCNAM = ALIGNMENT1_48 !
 48 ! X =  387.183, 6957.957,   3.31,  463.35,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 49 ! SRCNAM = ALIGNMENT1_49 !
 49 ! X =  387.200, 6957.952,   3.31,  463.48,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 50 ! SRCNAM = ALIGNMENT1_50 !
 50 ! X =  387.218, 6957.949,   3.31,  463.64,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 51 ! SRCNAM = ALIGNMENT1_51 !
 51 ! X =  387.235, 6957.946,   3.31,   463.8,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 52 ! SRCNAM = ALIGNMENT1_52 !
 52 ! X =  387.253, 6957.943,   3.31,  463.97,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 53 ! SRCNAM = ALIGNMENT1_53 !
 53 ! X =  387.271, 6957.939,   3.31,  464.13,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 54 ! SRCNAM = ALIGNMENT1_54 !
 54 ! X =  387.288, 6957.936,   3.31,   464.3,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 55 ! SRCNAM = ALIGNMENT1_55 !
 55 ! X =  387.306, 6957.933,   3.31,  464.47,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
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  0.0002, 0.001289, 0.0003689 !
!END!
  56 ! SRCNAM = ALIGNMENT1_56 !
  56 ! X =  387.323, 6957.930,    3.31,   464.63,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  57 ! SRCNAM = ALIGNMENT1_57 !
  57 ! X =  387.341, 6957.927,    3.31,    464.8,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  58 ! SRCNAM = ALIGNMENT1_58 !
  58 ! X =  387.359, 6957.923,    3.31,   464.97,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  59 ! SRCNAM = ALIGNMENT1_59 !
  59 ! X =  387.376, 6957.920,    3.31,   465.13,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  60 ! SRCNAM = ALIGNMENT1_60 !
  60 ! X =  387.394, 6957.917,    3.31,    465.3,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  61 ! SRCNAM = ALIGNMENT1_61 !
  61 ! X =  387.411, 6957.913,    3.31,   465.46,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  62 ! SRCNAM = ALIGNMENT1_62 !
  62 ! X =  387.429, 6957.911,    3.31,   465.63,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  63 ! SRCNAM = ALIGNMENT1_63 !
  63 ! X =  387.447, 6957.907,    3.31,    465.8,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  64 ! SRCNAM = ALIGNMENT1_64 !
  64 ! X =  387.464, 6957.904,    3.31,   465.96,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  65 ! SRCNAM = ALIGNMENT1_65 !
  65 ! X =  387.482, 6957.901,    3.31,   466.13,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  66 ! SRCNAM = ALIGNMENT1_66 !
  66 ! X =  387.500, 6957.898,    3.31,    466.3,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  67 ! SRCNAM = ALIGNMENT1_67 !
  67 ! X =  387.517, 6957.895,    3.31,   466.46,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  68 ! SRCNAM = ALIGNMENT1_68 !
  68 ! X =  387.535, 6957.891,    3.31,   466.63,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  69 ! SRCNAM = ALIGNMENT1_69 !
  69 ! X =  387.552, 6957.888,    3.31,   466.79,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  70 ! SRCNAM = ALIGNMENT1_70 !
  70 ! X =  387.570, 6957.885,    3.31,   466.96,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  71 ! SRCNAM = ALIGNMENT1_71 !
  71 ! X =  387.588, 6957.882,    3.31,   467.13,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  72 ! SRCNAM = ALIGNMENT1_72 !
  72 ! X =  387.605, 6957.879,    3.31,   467.29,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
  73 ! SRCNAM = ALIGNMENT1_73 !
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 73 ! X =  387.623, 6957.875,   3.31,  467.46,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 74 ! SRCNAM = ALIGNMENT1_74 !
 74 ! X =  387.640, 6957.872,   3.31,  467.62,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 75 ! SRCNAM = ALIGNMENT1_75 !
 75 ! X =  387.658, 6957.869,   3.31,  467.79,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 76 ! SRCNAM = ALIGNMENT1_76 !
 76 ! X =  387.676, 6957.866,   3.31,  467.94,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 77 ! SRCNAM = ALIGNMENT1_77 !
 77 ! X =  387.693, 6957.863,   3.31,  468.05,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 78 ! SRCNAM = ALIGNMENT1_78 !
 78 ! X =  387.711, 6957.859,   3.31,  468.12,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 79 ! SRCNAM = ALIGNMENT1_79 !
 79 ! X =  387.728, 6957.856,   3.31,  468.18,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 80 ! SRCNAM = ALIGNMENT1_80 !
 80 ! X =  387.746, 6957.853,   3.31,  468.25,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 81 ! SRCNAM = ALIGNMENT1_81 !
 81 ! X =  387.764, 6957.850,   3.31,  468.32,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 82 ! SRCNAM = ALIGNMENT1_82 !
 82 ! X =  387.781, 6957.847,   3.31,  468.38,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 83 ! SRCNAM = ALIGNMENT1_83 !
 83 ! X =  387.799, 6957.844,   3.31,  468.45,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 84 ! SRCNAM = ALIGNMENT1_84 !
 84 ! X =  387.817, 6957.841,   3.31,  468.51,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 85 ! SRCNAM = ALIGNMENT1_85 !
 85 ! X =  387.834, 6957.837,   3.31,  468.58,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 86 ! SRCNAM = ALIGNMENT1_86 !
 86 ! X =  387.852, 6957.834,   3.31,  468.64,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 87 ! SRCNAM = ALIGNMENT1_87 !
 87 ! X =  387.869, 6957.830,   3.31,  468.71,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 88 ! SRCNAM = ALIGNMENT1_88 !
 88 ! X =  387.887, 6957.828,   3.31,  468.77,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 89 ! SRCNAM = ALIGNMENT1_89 !
 89 ! X =  387.905, 6957.824,   3.31,  468.84,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 90 ! SRCNAM = ALIGNMENT1_90 !
 90 ! X =  387.922, 6957.821,   3.31,   468.9,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
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 91 ! SRCNAM = ALIGNMENT1_91 !
 91 ! X =  387.940, 6957.818,    3.31,   468.97,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 92 ! SRCNAM = ALIGNMENT1_92 !
 92 ! X =  387.957, 6957.815,    3.31,   469.04,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 93 ! SRCNAM = ALIGNMENT1_93 !
 93 ! X =  387.975, 6957.812,    3.31,    469.1,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 94 ! SRCNAM = ALIGNMENT1_94 !
 94 ! X =  387.993, 6957.809,    3.31,   469.17,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 95 ! SRCNAM = ALIGNMENT1_95 !
 95 ! X =  388.010, 6957.806,    3.31,   469.23,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 96 ! SRCNAM = ALIGNMENT1_96 !
 96 ! X =  388.028, 6957.802,    3.31,    469.3,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 97 ! SRCNAM = ALIGNMENT1_97 !
 97 ! X =  388.045, 6957.799,    3.31,   469.36,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 98 ! SRCNAM = ALIGNMENT1_98 !
 98 ! X =  388.063, 6957.796,    3.31,   469.43,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 99 ! SRCNAM = ALIGNMENT1_99 !
 99 ! X =  388.081, 6957.792,    3.31,   469.49,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
100 ! SRCNAM = ALIGNMENT1_100 !
100 ! X =  388.098, 6957.790,    3.31,   469.56,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
101 ! SRCNAM = ALIGNMENT1_101 !
101 ! X =  388.116, 6957.786,    3.31,   469.62,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
102 ! SRCNAM = ALIGNMENT1_102 !
102 ! X =  388.134, 6957.783,    3.31,   469.71,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
103 ! SRCNAM = ALIGNMENT1_103 !
103 ! X =  388.151, 6957.780,    3.31,   469.81,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
104 ! SRCNAM = ALIGNMENT1_104 !
104 ! X =  388.169, 6957.777,    3.31,   469.95,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
105 ! SRCNAM = ALIGNMENT1_105 !
105 ! X =  388.186, 6957.774,    3.31,   470.12,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
106 ! SRCNAM = ALIGNMENT1_106 !
106 ! X =  388.204, 6957.770,    3.31,   470.29,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
107 ! SRCNAM = ALIGNMENT1_107 !
107 ! X =  388.222, 6957.768,    3.31,   470.46,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
108 ! SRCNAM = ALIGNMENT1_108 !
108 ! X =  388.239, 6957.764,    3.31,   470.64,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
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!END!
 109 ! SRCNAM = ALIGNMENT1_109 !
 109 ! X =  388.257, 6957.761,    3.31,   470.81,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 110 ! SRCNAM = ALIGNMENT1_110 !
 110 ! X =  388.275, 6957.759,    3.31,   470.99,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 111 ! SRCNAM = ALIGNMENT1_111 !
 111 ! X =  388.292, 6957.757,    3.31,   471.16,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 112 ! SRCNAM = ALIGNMENT1_112 !
 112 ! X =  388.310, 6957.755,    3.31,   471.33,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 113 ! SRCNAM = ALIGNMENT1_113 !
 113 ! X =  388.328, 6957.753,    3.31,   471.51,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 114 ! SRCNAM = ALIGNMENT1_114 !
 114 ! X =  388.346, 6957.751,    3.31,   471.68,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 115 ! SRCNAM = ALIGNMENT1_115 !
 115 ! X =  388.364, 6957.750,    3.31,   471.85,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 116 ! SRCNAM = ALIGNMENT1_116 !
 116 ! X =  388.382, 6957.748,    3.31,   472.03,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 117 ! SRCNAM = ALIGNMENT1_117 !
 117 ! X =  388.399, 6957.747,    3.31,    472.2,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 118 ! SRCNAM = ALIGNMENT1_118 !
 118 ! X =  388.417, 6957.746,    3.31,   472.38,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 119 ! SRCNAM = ALIGNMENT1_119 !
 119 ! X =  388.435, 6957.745,    3.31,   472.55,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 120 ! SRCNAM = ALIGNMENT1_120 !
 120 ! X =  388.453, 6957.744,    3.31,   472.72,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 121 ! SRCNAM = ALIGNMENT1_121 !
 121 ! X =  388.471, 6957.744,    3.31,    472.9,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 122 ! SRCNAM = ALIGNMENT1_122 !
 122 ! X =  388.489, 6957.744,    3.31,   473.07,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 123 ! SRCNAM = ALIGNMENT1_123 !
 123 ! X =  388.507, 6957.744,    3.31,   473.25,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 124 ! SRCNAM = ALIGNMENT1_124 !
 124 ! X =  388.525, 6957.744,    3.31,   473.42,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 125 ! SRCNAM = ALIGNMENT1_125 !
 125 ! X =  388.543, 6957.744,    3.31,   473.59,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 126 ! SRCNAM = ALIGNMENT1_126 !
 126 ! X =  388.560, 6957.744,    3.31,   473.77,      8.33,     3.08, 0.002598, 0.001032, 0.0005838,
```

```
 0.0002, 0.001289, 0.0003689 !
!END!
 127 ! SRCNAM = ALIGNMENT1_127 !
 127 ! X =  388.578, 6957.745,    3.31,   473.94,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 128 ! SRCNAM = ALIGNMENT1_128 !
 128 ! X =  388.596, 6957.746,    3.31,   474.12,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 129 ! SRCNAM = ALIGNMENT1_129 !
 129 ! X =  388.614, 6957.747,    3.31,   474.29,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 130 ! SRCNAM = ALIGNMENT1_130 !
 130 ! X =  388.632, 6957.748,    3.31,   474.46,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 131 ! SRCNAM = ALIGNMENT1_131 !
 131 ! X =  388.650, 6957.750,    3.31,   474.64,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 132 ! SRCNAM = ALIGNMENT1_132 !
 132 ! X =  388.668, 6957.751,    3.31,   474.81,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 133 ! SRCNAM = ALIGNMENT1_133 !
 133 ! X =  388.685, 6957.752,    3.31,   474.98,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 134 ! SRCNAM = ALIGNMENT1_134 !
 134 ! X =  388.703, 6957.753,    3.31,   475.16,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 135 ! SRCNAM = ALIGNMENT1_135 !
 135 ! X =  388.721, 6957.754,    3.31,   475.33,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 136 ! SRCNAM = ALIGNMENT1_136 !
 136 ! X =  388.739, 6957.756,    3.31,    475.5,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 137 ! SRCNAM = ALIGNMENT1_137 !
 137 ! X =  388.757, 6957.757,    3.31,   475.64,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 138 ! SRCNAM = ALIGNMENT1_138 !
 138 ! X =  388.775, 6957.759,    3.31,   475.75,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 139 ! SRCNAM = ALIGNMENT1_139 !
 139 ! X =  388.793, 6957.760,    3.31,   475.82,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 140 ! SRCNAM = ALIGNMENT1_140 !
 140 ! X =  388.810, 6957.761,    3.31,   475.85,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 141 ! SRCNAM = ALIGNMENT1_141 !
 141 ! X =  388.828, 6957.763,    3.31,   475.87,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 142 ! SRCNAM = ALIGNMENT1_142 !
 142 ! X =  388.846, 6957.764,    3.31,   475.88,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 143 ! SRCNAM = ALIGNMENT1_143 !
 143 ! X =  388.864, 6957.765,    3.31,   475.89,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
 0.0002, 0.001289, 0.0003689 !
!END!
 144 ! SRCNAM = ALIGNMENT1_144 !
```

```
 144 ! X =  388.882, 6957.766,    3.31,    475.9,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 145 ! SRCNAM = ALIGNMENT1_145 !
 145 ! X =  388.900, 6957.767,    3.31,   475.92,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 146 ! SRCNAM = ALIGNMENT1_146 !
 146 ! X =  388.918, 6957.769,    3.31,   475.93,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 147 ! SRCNAM = ALIGNMENT1_147 !
 147 ! X =  388.935, 6957.770,    3.31,   475.94,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 148 ! SRCNAM = ALIGNMENT1_148 !
 148 ! X =  388.953, 6957.772,    3.31,   475.95,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 149 ! SRCNAM = ALIGNMENT1_149 !
 149 ! X =  388.971, 6957.773,    3.31,   475.96,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 150 ! SRCNAM = ALIGNMENT1_150 !
 150 ! X =  388.989, 6957.774,    3.31,   475.98,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 151 ! SRCNAM = ALIGNMENT1_151 !
 151 ! X =  389.007, 6957.775,    3.31,   475.99,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 152 ! SRCNAM = ALIGNMENT1_152 !
 152 ! X =  389.025, 6957.777,    3.31,    476.0,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 153 ! SRCNAM = ALIGNMENT1_153 !
 153 ! X =  389.042, 6957.778,    3.31,   476.01,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 154 ! SRCNAM = ALIGNMENT1_154 !
 154 ! X =  389.060, 6957.779,    3.31,   476.02,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 155 ! SRCNAM = ALIGNMENT1_155 !
 155 ! X =  389.078, 6957.780,    3.31,   476.04,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 156 ! SRCNAM = ALIGNMENT1_156 !
 156 ! X =  389.096, 6957.782,    3.31,   476.05,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 157 ! SRCNAM = ALIGNMENT1_157 !
 157 ! X =  389.114, 6957.783,    3.31,   476.08,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 158 ! SRCNAM = ALIGNMENT1_158 !
 158 ! X =  389.132, 6957.784,    3.31,   476.15,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 159 ! SRCNAM = ALIGNMENT1_159 !
 159 ! X =  389.150, 6957.786,    3.31,   476.25,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 160 ! SRCNAM = ALIGNMENT1_160 !
 160 ! X =  389.167, 6957.787,    3.31,   476.38,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 161 ! SRCNAM = ALIGNMENT1_161 !
 161 ! X =  389.185, 6957.788,    3.31,   476.52,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
```

```
 162 ! SRCNAM = ALIGNMENT1_162 !
 162 ! X =  389.203, 6957.790,    3.31,   476.66,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 163 ! SRCNAM = ALIGNMENT1_163 !
 163 ! X =  389.221, 6957.791,    3.31,    476.8,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 164 ! SRCNAM = ALIGNMENT1_164 !
 164 ! X =  389.239, 6957.792,    3.31,   476.94,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 165 ! SRCNAM = ALIGNMENT1_165 !
 165 ! X =  389.257, 6957.793,    3.31,   477.08,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 166 ! SRCNAM = ALIGNMENT1_166 !
 166 ! X =  389.275, 6957.795,    3.31,   477.22,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!
 167 ! SRCNAM = ALIGNMENT1_167 !
 167 ! X =  389.292, 6957.796,    3.31,   477.36,       8.33,      3.08, 0.002598, 0.001032, 0.0005838,
  0.0002, 0.001289, 0.0003689 !
!END!

--------
   a
    Data for each source are treated as a separate input subgroup
    and therefore must end with an input group terminator.

   b
    An emission rate must be entered for every pollutant modeled.
    Enter emission rate of zero for secondary pollutants that are
    modeled, but not emitted. Units are specified by IVLU
    (e.g. 1 for g/s).

---------------
Subgroup (16c)
---------------
                                   a
        VOLUME SOURCE: EMISSION-RATE SCALING FACTORS
        --------------------------------------------

     Use this subgroup to identify temporal variations in the emission
     rates given in 16b. Factors assigned multiply the rates in 16b.
     Skip sources here that have constant emissions. For more elaborate
     variation in source parameters, use VOLEMARB.DAT and NVL2 > 0.

     Sets of emission-rate scale factors are defined in Input Group 19, and
     are referenced by the FACTORNAME. Provide NSVL1 lines that identify the
     emission-rate scale factor table for each source-species combination that
     uses the scaling option. Note that a scale-factor table can be used with
     more than one source-species combination so a FACTORNAME can be repeated.


  Source-          Source     Species     Scale-factor table
  Species          Name   b   Name   c    Name       d
   No.          (SRCNAM)    (CSPEC)     (FACTORNAME)
  ------        ------------ ------------ ----------------------



--------
   a
    Data for each species are treated as a separate input subgroup
    and therefore must end with an input group terminator.
   b
    Source name must match one of the SRCNAM names defined in Input Group 16b
   c
    Species name must match one of the CSPEC names of emitted species defined in Input Group 3
   d
```

Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

INPUT GROUP: 17 -- FLARE source control parameters (variable emissions file)

Number of flare sources defined in FLEMARB.DAT file(s)
(NFL2) Default: 0 ! NFL2 = 0 !

(At least 1 FLEMARB.DAT file is needed if NFL2 > 0)

!END!

INPUT GROUPS: 18a, 18b, 18c -- Road Emissions parameters

Subgroup (18a)

Emissions from roads are generated from individual line segments defined by a sequence of coordinates provided for each road-link. Each link is entered as a discrete source and is defined as a section of the road for which emissions are uniform.

A long, winding isolated road might be characterized by a single link made up of many coordinate triples (x,y,z) that describe its pathway. These points should be sufficient to resolve curves, but need not have uniform spacing. For example, a straight flat segment can be defined by 2 points, regardless of the distance covered. Long line segments are automatically divided further within the model into segments that are limited by the grid-cell boundaries (no segment may extend across multiple cells). One emission rate (g/m/s) for each species is used for the entire road.

Near a congested intersection, many short links may be required to resolve the spatial and temporal distribution of emissions. Each is entered and modeled as a discrete source.

Number of road-links with emission parameters
provided in Subgroup 18b (NRD1) No default ! NRD1 = 0 !

Number of road-links with arbitrarily time-varying
emission parameters (NRD2) No default ! NRD2 = 0 !
(If NRD2 > 0, ALL variable road data
are read from the file: RDEMARB.DAT)

Emissions from one or more of the roads presented in Subgroup 18b may vary over time-based cycles or by meteorology. This variability is modeled by applying an emission-rate scale factor specified for particular road links and species in Subgroup 18c.

Number of road links and species combinations
with variable emission-rate scale-factors
(NSFRDS) Default: 0 ! NSFRDS = 0 !

!END!

Subgroup (18b)
---

a
DATA FOR ROADS WITH CONSTANT OR SCALED EMISSION PARAMETERS
---
b

Road No.	Effect. Height (mAGL)	Initial Sigma z (m)	Initial Sigma y (m)	Emission Rates (g/s/m)

c

---

a
Data for each of the NRD1 roads are treated as a separate input subgroup
and therefore must end with an input group terminator.

b
NSPEC Emission rates must be entered (one for every pollutant modeled).
Enter emission rate of zero for secondary pollutants.

c
Road-source names are entered without spaces, and may be 16 characters long.

Subgroup (18c)

---

a

EMISSION-RATE SCALING FACTORS

Use this subgroup to identify temporal variations in the emission
rates given in 18b. Factors assigned multiply the rates in 18b.
Skip sources here that have constant emissions. For more elaborate
variation in source parameters, use RDEMARB.DAT and NRD2 > 0.

Sets of emission-rate scale factors are defined in Input Group 19, and
are referenced by the FACTORNAME. Provide NSFRDS lines that identify the
emission-rate scale factor table for each source-species combination that
uses the scaling option. Note that a scale-factor table can be used with
more than one source-species combination so a FACTORNAME can be repeated.

Source-Species No.	Source Name b (SRCNAM)	Species Name c (CSPEC)	Scale-factor table Name d (FACTORNAME)

---

a
Assignment for each source-specie is treated as a separate input subgroup
and therefore must end with an input group terminator.

b
Source name must match one of the SRCNAM names defined in Input Group 18b

c
Species name must match one of the CSPEC names of emitted species defined in Input Group 3

d
Scale-factor name must match one of the FACTORNAME names defined in Input Group 19

Subgroup (18d)

---

a

COORDINATES FOR EACH NAMED ROAD

Coordinate No.	X Coordinate (km)	Y Coordinate (km)	Ground Elevation (m)

---

a
Each line of coordinates is treated as a separate input subgroup
and therefore must end with an input group terminator.

INPUT GROUPS: 19a, 19b -- Emission rate scale-factor tables

Use this group to enter variation factors applied to emission rates for any source-specie combinations that use this feature. The tables of emission-rate scale factors are referenced by the name assigned to FACTORNAME. These names do not need to include specific source or species names used in the simulation, particularly if one factor table is used for many types of sources and species, but should be descriptive. But if a factor table applies to just one source, the reference name for it should generally contain that source-name. FACTORNAME must NOT include spaces.

The FACTORTYPE for each table must be one of the following:

```
CONSTANT1          1   scaling factor
MONTH12           12  scaling factors: months 1-12
DAY7               7   scaling factors: days 1-7
                  [SUNDAY,MONDAY, ... FRIDAY,SATURDAY]
HOUR24            24  scaling factors: hours 1-24
HOUR24_DAY7       168 scaling factors: hours 1-24,
                   repeated  7 times: SUNDAY, MONDAY, ... SATURDAY
HOUR24_MONTH12    288 scaling factors: hours 1-24,
                   repeated 12 times: months 1-12
WSP6               6   scaling factors: wind speed classes 1-6
                  [speed classes (WSCAT) defined in Group 12]
WSP6_PGCLASS6     36  scaling factors: wind speed classes 1-6
                   repeated  6 times: PG classes A,B,C,D,E,F
                  [speed classes (WSCAT) defined in Group 12]
TEMPERATURE12     12  scaling factors: temperature classes 1-12
                  [temperature classes (TKCAT) defined in Group 12]
```

The number of tables defined may exceed the number of tables referenced in the input groups for each source type above (for convenience), but tables for all FACTORNAME names referenced must be present here.

Subgroup (19a)

Number of Emission Scale-Factor tables (NSFTAB) Default: 0 ! NSFTAB = 0 !

!END!

Subgroup (19b)
---

a,b,c

Enter factors for NSFTAB Emission Scale-Factor tables

---

a

Assignments for each table are treated as a separate input subgroup and therefore must end with an input group terminator.

b

FACTORNAME must be no longer than 40 characters

c

Spaces are NOT allowed in any FACTORNAME or FACTORTYPE assignment, and the names are NOT case-sensitive

---

INPUT GROUPS: 20a, 20b, 20c -- Non-gridded (discrete) receptor information
---

Subgroup (20a)

Number of non-gridded receptors (NREC) No default ! NREC = 6727 !

Group names can be used to assign receptor locations in
Subgroup 17c and thereby provide an identification that
can be referenced when postprocessing receptors. The
default assignment name X is used when NRGRP = 0.

Number of receptor group names (NRGRP) Default: 0 ! NRGRP = 0 !

!END!

Subgroup (20b)

Provide a name for each receptor group if NRGRP>0.
Enter NRGRP lines.
a,b
Group Name
---
* RGRPNAMLIST = *

---
a
Each group name provided is treated as a separate input subgroup
and therefore must end with an input group terminator.
b
Receptor group names must not include blanks.

Subgroup (20c)
---

a
NON-GRIDDED (DISCRETE) RECEPTOR DATA
---
c X Y Ground Height b
Receptor Group Coordinate Coordinate Elevation Above Ground
No. Name (km) (km) (m) (m)
--- --- --- --- --- ---

1 ! X =	384.61900,	6957.64000,	456.7,	0.0 !	!END!
2 ! X =	384.75800,	6957.58000,	457.2,	0.0 !	!END!
3 ! X =	384.98900,	6959.66000,	540.5,	0.0 !	!END!
4 ! X =	385.08400,	6957.47000,	460.7,	0.0 !	!END!
5 ! X =	385.15400,	6959.61000,	520.9,	0.0 !	!END!
6 ! X =	385.20400,	6959.52000,	497.0,	0.0 !	!END!
7 ! X =	385.28500,	6959.64000,	515.8,	0.0 !	!END!
8 ! X =	385.61300,	6959.85000,	529.2,	0.0 !	!END!
9 ! X =	385.70000,	6959.55500,	490.7,	0.0 !	!END!
10 ! X =	385.78200,	6959.97000,	550.6,	0.0 !	!END!
11 ! X =	385.78200,	6959.97000,	550.6,	0.0 !	!END!
12 ! X =	385.82100,	6956.78000,	485.2,	0.0 !	!END!
13 ! X =	385.83500,	6959.53100,	487.2,	0.0 !	!END!
14 ! X =	385.84000,	6958.37000,	452.0,	0.0 !	!END!
15 ! X =	385.89500,	6957.09000,	475.8,	0.0 !	!END!
16 ! X =	385.89500,	6957.09000,	475.8,	0.0 !	!END!
17 ! X =	385.92900,	6958.23000,	457.4,	0.0 !	!END!
18 ! X =	386.01700,	6959.77000,	522.7,	0.0 !	!END!
19 ! X =	386.03800,	6957.08000,	477.4,	0.0 !	!END!

20 ! X = 386.06900, 6958.17600, 456.6, 0.0 ! !END!
21 ! X = 386.07400, 6956.85000, 483.7, 0.0 ! !END!
22 ! X = 386.08300, 6958.28100, 455.2, 0.0 ! !END!
23 ! X = 386.13100, 6959.31000, 475.4, 0.0 ! !END!
24 ! X = 386.15900, 6956.81000, 484.4, 0.0 ! !END!
25 ! X = 386.20000, 6959.13000, 466.7, 0.0 ! !END!
26 ! X = 386.22700, 6958.16300, 457.9, 0.0 ! !END!
27 ! X = 386.24900, 6957.00000, 476.2, 0.0 ! !END!
28 ! X = 386.30200, 6956.41000, 488.4, 0.0 ! !END!
29 ! X = 386.30800, 6956.67000, 486.4, 0.0 ! !END!
30 ! X = 386.30800, 6956.67000, 486.4, 0.0 ! !END!
31 ! X = 386.39500, 6957.39000, 465.6, 0.0 ! !END!
32 ! X = 386.39500, 6956.23000, 490.9, 0.0 ! !END!
33 ! X = 386.47200, 6959.40000, 504.3, 0.0 ! !END!
34 ! X = 386.56100, 6959.33000, 493.7, 0.0 ! !END!
35 ! X = 386.75200, 6959.25000, 487.6, 0.0 ! !END!
36 ! X = 386.86100, 6956.09000, 487.9, 0.0 ! !END!
37 ! X = 386.86700, 6956.34000, 480.7, 0.0 ! !END!
38 ! X = 386.93600, 6956.15000, 485.6, 0.0 ! !END!
39 ! X = 386.96100, 6959.27000, 491.0, 0.0 ! !END!
40 ! X = 387.02800, 6959.93000, 572.9, 0.0 ! !END!
41 ! X = 387.02800, 6959.93000, 572.9, 0.0 ! !END!
42 ! X = 387.15800, 6959.18000, 486.5, 0.0 ! !END!
43 ! X = 387.17000, 6959.23000, 487.9, 0.0 ! !END!
44 ! X = 387.20600, 6959.35000, 495.7, 0.0 ! !END!
45 ! X = 387.20600, 6959.44000, 502.3, 0.0 ! !END!
46 ! X = 387.20700, 6959.40000, 500.7, 0.0 ! !END!
47 ! X = 387.22100, 6959.49000, 505.9, 0.0 ! !END!
48 ! X = 387.22500, 6959.27000, 493.1, 0.0 ! !END!
49 ! X = 387.22500, 6959.30000, 493.8, 0.0 ! !END!
50 ! X = 387.23100, 6959.70000, 526.5, 0.0 ! !END!
51 ! X = 387.23100, 6959.70000, 526.5, 0.0 ! !END!
52 ! X = 387.23700, 6959.52000, 507.5, 0.0 ! !END!
53 ! X = 387.24200, 6959.13000, 489.7, 0.0 ! !END!
54 ! X = 387.29800, 6959.20000, 494.4, 0.0 ! !END!
55 ! X = 387.32900, 6959.24000, 495.2, 0.0 ! !END!
56 ! X = 387.33800, 6959.30000, 497.2, 0.0 ! !END!
57 ! X = 387.35600, 6959.35000, 500.9, 0.0 ! !END!
58 ! X = 387.35700, 6959.48000, 502.0, 0.0 ! !END!
59 ! X = 387.36500, 6959.39000, 502.4, 0.0 ! !END!
60 ! X = 387.37000, 6959.49000, 503.9, 0.0 ! !END!
61 ! X = 387.37700, 6959.46000, 503.0, 0.0 ! !END!
62 ! X = 387.37800, 6959.55000, 510.3, 0.0 ! !END!
63 ! X = 387.38400, 6959.12000, 498.5, 0.0 ! !END!
64 ! X = 387.38800, 6959.15000, 500.1, 0.0 ! !END!
65 ! X = 387.40700, 6959.58000, 515.5, 0.0 ! !END!
66 ! X = 387.41800, 6959.22000, 505.4, 0.0 ! !END!
67 ! X = 387.42100, 6959.64000, 518.0, 0.0 ! !END!
68 ! X = 387.43000, 6959.27000, 509.4, 0.0 ! !END!
69 ! X = 387.43100, 6959.72000, 523.7, 0.0 ! !END!
70 ! X = 387.43300, 6959.69000, 522.6, 0.0 ! !END!
71 ! X = 387.44100, 6959.46000, 512.2, 0.0 ! !END!
72 ! X = 387.44400, 6959.78000, 528.1, 0.0 ! !END!
73 ! X = 387.44700, 6959.31000, 511.0, 0.0 ! !END!
74 ! X = 387.46900, 6959.40000, 514.2, 0.0 ! !END!
75 ! X = 387.47900, 6959.48000, 514.4, 0.0 ! !END!
76 ! X = 387.48100, 6959.86000, 529.8, 0.0 ! !END!
77 ! X = 387.48800, 6959.94000, 538.3, 0.0 ! !END!
78 ! X = 387.49200, 6959.90000, 532.9, 0.0 ! !END!
79 ! X = 387.50400, 6959.53000, 518.7, 0.0 ! !END!
80 ! X = 387.50600, 6959.57000, 522.2, 0.0 ! !END!
81 ! X = 387.51000, 6959.69000, 524.9, 0.0 ! !END!
82 ! X = 387.51400, 6958.99000, 508.4, 0.0 ! !END!
83 ! X = 387.51800, 6959.00000, 510.6, 0.0 ! !END!
84 ! X = 387.53000, 6959.72000, 529.7, 0.0 ! !END!
85 ! X = 387.53500, 6959.63000, 524.5, 0.0 ! !END!
86 ! X = 387.54800, 6959.83000, 529.8, 0.0 ! !END!
87 ! X = 387.56300, 6959.77000, 536.3, 0.0 ! !END!
88 ! X = 387.57400, 6959.97000, 546.0, 0.0 ! !END!
89 ! X = 387.57900, 6958.02000, 461.4, 0.0 ! !END!
90 ! X = 387.58100, 6959.88000, 536.6, 0.0 ! !END!

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 91 ! X =   387.61800,   6959.57000,    542.1,      0.0 !  !END!
 92 ! X =   387.65400,   6958.76000,    484.3,      0.0 !  !END!
 93 ! X =   387.66100,   6958.75000,    483.1,      0.0 !  !END!
 94 ! X =   387.67300,   6958.67000,    478.4,      0.0 !  !END!
 95 ! X =   387.69200,   6958.03000,    461.9,      0.0 !  !END!
 96 ! X =   387.74700,   6959.97000,    574.7,      0.0 !  !END!
 97 ! X =   387.82200,   6958.10000,    463.0,      0.0 !  !END!
 98 ! X =   387.83700,   6957.89700,    463.7,      0.0 !  !END!
 99 ! X =   387.93300,   6959.63000,    623.2,      0.0 !  !END!
100 ! X =   387.96500,   6959.66000,    622.5,      0.0 !  !END!
101 ! X =   387.97800,   6959.59000,    617.9,      0.0 !  !END!
102 ! X =   387.97900,   6959.69000,    625.3,      0.0 !  !END!
103 ! X =   387.98200,   6959.74000,    624.1,      0.0 !  !END!
104 ! X =   387.98300,   6959.82000,    625.6,      0.0 !  !END!
105 ! X =   387.99200,   6959.78000,    627.0,      0.0 !  !END!
106 ! X =   388.01300,   6958.17000,    469.1,      0.0 !  !END!
107 ! X =   388.02800,   6959.62000,    625.3,      0.0 !  !END!
108 ! X =   388.03400,   6959.57000,    621.1,      0.0 !  !END!
109 ! X =   388.05500,   6959.79000,    632.5,      0.0 !  !END!
110 ! X =   388.05600,   6959.73000,    631.4,      0.0 !  !END!
111 ! X =   388.06600,   6959.82000,    634.3,      0.0 !  !END!
112 ! X =   388.07100,   6958.44000,    480.7,      0.0 !  !END!
113 ! X =   388.07900,   6959.68000,    631.9,      0.0 !  !END!
114 ! X =   388.08400,   6959.61000,    629.4,      0.0 !  !END!
115 ! X =   388.08800,   6958.95000,    504.2,      0.0 !  !END!
116 ! X =   388.10600,   6959.81000,    636.0,      0.0 !  !END!
117 ! X =   388.11700,   6959.69000,    633.0,      0.0 !  !END!
118 ! X =   388.12800,   6959.60000,    629.9,      0.0 !  !END!
119 ! X =   388.13900,   6959.80000,    635.5,      0.0 !  !END!
120 ! X =   388.16100,   6959.32000,    568.6,      0.0 !  !END!
121 ! X =   388.17500,   6959.32000,    569.8,      0.0 !  !END!
122 ! X =   388.18000,   6959.67000,    632.2,      0.0 !  !END!
123 ! X =   388.18100,   6959.78000,    633.8,      0.0 !  !END!
124 ! X =   388.19300,   6959.60000,    627.5,      0.0 !  !END!
125 ! X =   388.21700,   6959.68000,    631.6,      0.0 !  !END!
126 ! X =   388.21800,   6958.67000,    488.6,      0.0 !  !END!
127 ! X =   388.22100,   6959.78000,    632.5,      0.0 !  !END!
128 ! X =   388.22800,   6959.59000,    625.6,      0.0 !  !END!
129 ! X =   388.24700,   6958.87000,    501.4,      0.0 !  !END!
130 ! X =   388.25200,   6959.61000,    627.9,      0.0 !  !END!
131 ! X =   388.26400,   6958.69000,    490.8,      0.0 !  !END!
132 ! X =   388.26400,   6959.05000,    516.5,      0.0 !  !END!
133 ! X =   388.26500,   6958.94000,    506.3,      0.0 !  !END!
134 ! X =   388.26800,   6959.68000,    631.8,      0.0 !  !END!
135 ! X =   388.27600,   6958.80000,    498.0,      0.0 !  !END!
136 ! X =   388.27800,   6959.13000,    528.5,      0.0 !  !END!
137 ! X =   388.29800,   6958.91000,    503.4,      0.0 !  !END!
138 ! X =   388.29900,   6959.77000,    629.8,      0.0 !  !END!
139 ! X =   388.30300,   6958.66000,    490.0,      0.0 !  !END!
140 ! X =   388.30400,   6959.72000,    631.6,      0.0 !  !END!
141 ! X =   388.30500,   6959.61000,    630.7,      0.0 !  !END!
142 ! X =   388.31100,   6959.03000,    516.5,      0.0 !  !END!
143 ! X =   388.31300,   6958.80000,    499.1,      0.0 !  !END!
144 ! X =   388.32500,   6959.12000,    524.4,      0.0 !  !END!
145 ! X =   388.33400,   6959.62000,    631.4,      0.0 !  !END!
146 ! X =   388.33600,   6958.88000,    501.2,      0.0 !  !END!
147 ! X =   388.34500,   6958.55000,    490.1,      0.0 !  !END!
148 ! X =   388.34800,   6958.68000,    490.4,      0.0 !  !END!
149 ! X =   388.35400,   6958.78000,    497.9,      0.0 !  !END!
150 ! X =   388.35400,   6959.09000,    520.4,      0.0 !  !END!
151 ! X =   388.35700,   6958.99000,    513.1,      0.0 !  !END!
152 ! X =   388.36400,   6958.50000,    491.3,      0.0 !  !END!
153 ! X =   388.37200,   6959.70000,    627.6,      0.0 !  !END!
154 ! X =   388.37300,   6958.85000,    501.1,      0.0 !  !END!
155 ! X =   388.38200,   6959.74000,    626.1,      0.0 !  !END!
156 ! X =   388.38900,   6959.62000,    624.6,      0.0 !  !END!
157 ! X =   388.39300,   6958.76000,    496.5,      0.0 !  !END!
158 ! X =   388.39500,   6958.68000,    492.5,      0.0 !  !END!
159 ! X =   388.39500,   6958.98000,    513.9,      0.0 !  !END!
160 ! X =   388.40100,   6959.08000,    522.1,      0.0 !  !END!
161 ! X =   388.40900,   6959.16000,    536.2,      0.0 !  !END!
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162 ! X =    388.41600,   6958.83000,    500.9,      0.0 !  !END!
163 ! X =    388.41800,   6959.63000,    621.5,      0.0 !  !END!
164 ! X =    388.42800,   6958.97000,    513.0,      0.0 !  !END!
165 ! X =    388.43900,   6959.05000,    517.4,      0.0 !  !END!
166 ! X =    388.45300,   6959.69000,    619.1,      0.0 !  !END!
167 ! X =    388.45300,   6959.63000,    617.4,      0.0 !  !END!
168 ! X =    388.45800,   6958.84000,    502.5,      0.0 !  !END!
169 ! X =    388.46000,   6958.69000,    492.0,      0.0 !  !END!
170 ! X =    388.46400,   6958.74000,    495.1,      0.0 !  !END!
171 ! X =    388.47400,   6958.95000,    509.3,      0.0 !  !END!
172 ! X =    388.47800,   6958.84000,    503.3,      0.0 !  !END!
173 ! X =    388.48400,   6959.03000,    517.9,      0.0 !  !END!
174 ! X =    388.49200,   6958.83000,    503.4,      0.0 !  !END!
175 ! X =    388.49700,   6959.67000,    617.6,      0.0 !  !END!
176 ! X =    388.50700,   6959.59000,    614.0,      0.0 !  !END!
177 ! X =    388.51800,   6958.93000,    507.2,      0.0 !  !END!
178 ! X =    388.51900,   6959.02000,    517.7,      0.0 !  !END!
179 ! X =    388.52600,   6959.09000,    518.8,      0.0 !  !END!
180 ! X =    388.52700,   6959.13000,    526.5,      0.0 !  !END!
181 ! X =    388.54100,   6959.58000,    610.4,      0.0 !  !END!
182 ! X =    388.54500,   6959.67000,    617.1,      0.0 !  !END!
183 ! X =    388.55500,   6958.85000,    503.5,      0.0 !  !END!
184 ! X =    388.55700,   6958.75000,    495.5,      0.0 !  !END!
185 ! X =    388.56700,   6958.79000,    499.4,      0.0 !  !END!
186 ! X =    388.58500,   6958.96000,    511.0,      0.0 !  !END!
187 ! X =    388.58600,   6958.92000,    507.1,      0.0 !  !END!
188 ! X =    388.58700,   6958.28000,    471.3,      0.0 !  !END!
189 ! X =    388.59000,   6958.88000,    504.5,      0.0 !  !END!
190 ! X =    388.59300,   6959.58000,    604.6,      0.0 !  !END!
191 ! X =    388.59800,   6959.00000,    515.4,      0.0 !  !END!
192 ! X =    388.60600,   6959.04000,    517.2,      0.0 !  !END!
193 ! X =    388.61000,   6959.08000,    522.9,      0.0 !  !END!
194 ! X =    388.61500,   6959.13000,    528.5,      0.0 !  !END!
195 ! X =    388.61700,   6959.66000,    603.8,      0.0 !  !END!
196 ! X =    388.63200,   6959.16000,    535.6,      0.0 !  !END!
197 ! X =    388.65500,   6958.81000,    498.9,      0.0 !  !END!
198 ! X =    388.68400,   6959.46000,    590.4,      0.0 !  !END!
199 ! X =    388.70100,   6958.87000,    499.6,      0.0 !  !END!
200 ! X =    388.70300,   6958.83000,    499.4,      0.0 !  !END!
201 ! X =    388.70700,   6958.91000,    502.7,      0.0 !  !END!
202 ! X =    388.70800,   6958.94000,    506.5,      0.0 !  !END!
203 ! X =    388.71800,   6958.99000,    514.4,      0.0 !  !END!
204 ! X =    388.73000,   6959.39000,    583.2,      0.0 !  !END!
205 ! X =    388.74200,   6959.46000,    590.9,      0.0 !  !END!
206 ! X =    388.74300,   6959.07000,    518.2,      0.0 !  !END!
207 ! X =    388.74400,   6959.12000,    525.5,      0.0 !  !END!
208 ! X =    388.74700,   6959.50000,    590.9,      0.0 !  !END!
209 ! X =    388.75000,   6959.20000,    545.1,      0.0 !  !END!
210 ! X =    388.75100,   6959.03000,    517.8,      0.0 !  !END!
211 ! X =    388.75500,   6959.15000,    532.5,      0.0 !  !END!
212 ! X =    388.75600,   6959.37000,    576.5,      0.0 !  !END!
213 ! X =    388.76300,   6957.82300,    472.3,      0.0 !  !END!
214 ! X =    388.77500,   6956.86000,    498.2,      0.0 !  !END!
215 ! X =    388.78400,   6959.45000,    585.9,      0.0 !  !END!
216 ! X =    388.78700,   6958.86000,    500.5,      0.0 !  !END!
217 ! X =    388.79400,   6958.91000,    503.0,      0.0 !  !END!
218 ! X =    388.79700,   6959.36000,    572.4,      0.0 !  !END!
219 ! X =    388.80900,   6959.49000,    585.9,      0.0 !  !END!
220 ! X =    388.81100,   6958.95000,    507.2,      0.0 !  !END!
221 ! X =    388.81300,   6959.12000,    526.7,      0.0 !  !END!
222 ! X =    388.81300,   6959.19000,    542.8,      0.0 !  !END!
223 ! X =    388.81800,   6958.99000,    512.8,      0.0 !  !END!
224 ! X =    388.82300,   6957.82000,    473.5,      0.0 !  !END!
225 ! X =    388.82300,   6959.36000,    571.0,      0.0 !  !END!
226 ! X =    388.82400,   6958.84000,    497.8,      0.0 !  !END!
227 ! X =    388.82600,   6959.03000,    515.1,      0.0 !  !END!
228 ! X =    388.82600,   6959.44000,    580.2,      0.0 !  !END!
229 ! X =    388.83100,   6959.49000,    584.5,      0.0 !  !END!
230 ! X =    388.85000,   6959.08000,    520.3,      0.0 !  !END!
231 ! X =    388.85100,   6957.82800,    473.4,      0.0 !  !END!
232 ! X =    388.86000,   6959.15000,    532.9,      0.0 !  !END!
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233 ! X =    388.86500,   6959.43000,    579.9,      0.0 !  !END!
234 ! X =    388.86800,   6959.33000,    563.3,      0.0 !  !END!
235 ! X =    388.88500,   6959.46000,    582.1,      0.0 !  !END!
236 ! X =    388.90800,   6959.42000,    581.6,      0.0 !  !END!
237 ! X =    388.91500,   6959.36000,    570.2,      0.0 !  !END!
238 ! X =    388.92800,   6959.48000,    582.2,      0.0 !  !END!
239 ! X =    388.96000,   6959.36000,    569.8,      0.0 !  !END!
240 ! X =    388.96500,   6959.00000,    514.0,      0.0 !  !END!
241 ! X =    388.97200,   6959.47000,    579.4,      0.0 !  !END!
242 ! X =    388.97700,   6959.41000,    576.0,      0.0 !  !END!
243 ! X =    388.98400,   6959.36000,    569.1,      0.0 !  !END!
244 ! X =    389.02300,   6959.46000,    575.1,      0.0 !  !END!
245 ! X =    389.02900,   6957.47900,    483.8,      0.0 !  !END!
246 ! X =    389.04100,   6959.53000,    573.2,      0.0 !  !END!
247 ! X =    389.04900,   6959.41000,    570.5,      0.0 !  !END!
248 ! X =    389.05000,   6959.36000,    566.3,      0.0 !  !END!
249 ! X =    389.06400,   6959.45000,    571.7,      0.0 !  !END!
250 ! X =    389.13500,   6958.53000,    483.9,      0.0 !  !END!
251 ! X =    389.13500,   6957.47000,    483.9,      0.0 !  !END!
252 ! X =    389.15300,   6957.86700,    475.3,      0.0 !  !END!
253 ! X =    389.15300,   6958.87000,    507.1,      0.0 !  !END!
254 ! X =    389.16600,   6958.11000,    473.7,      0.0 !  !END!
255 ! X =    389.18600,   6959.77000,    545.3,      0.0 !  !END!
256 ! X =    389.18700,   6958.81000,    507.4,      0.0 !  !END!
257 ! X =    389.21600,   6958.89000,    517.3,      0.0 !  !END!
258 ! X =    389.27200,   6958.80000,    512.6,      0.0 !  !END!
259 ! X =    389.27900,   6957.88000,    476.5,      0.0 !  !END!
260 ! X =    389.29500,   6958.64000,    500.0,      0.0 !  !END!
261 ! X =    389.30400,   6958.16500,    474.2,      0.0 !  !END!
262 ! X =    389.31200,   6958.77000,    511.3,      0.0 !  !END!
263 ! X =    389.34600,   6958.75000,    509.2,      0.0 !  !END!
264 ! X =    389.34700,   6956.11000,    528.7,      0.0 !  !END!
265 ! X =    389.36900,   6958.52000,    488.7,      0.0 !  !END!
266 ! X =    389.37700,   6955.84000,    537.9,      0.0 !  !END!
267 ! X =    389.38200,   6958.73000,    508.2,      0.0 !  !END!
268 ! X =    389.40300,   6957.88100,    476.8,      0.0 !  !END!
269 ! X =    389.41900,   6958.71000,    507.5,      0.0 !  !END!
270 ! X =    389.44500,   6958.49000,    490.0,      0.0 !  !END!
271 ! X =    389.44500,   6958.49000,    490.0,      0.0 !  !END!
272 ! X =    389.45500,   6958.69000,    506.5,      0.0 !  !END!
273 ! X =    389.45800,   6958.56000,    496.1,      0.0 !  !END!
274 ! X =    389.47800,   6957.90300,    477.2,      0.0 !  !END!
275 ! X =    389.49200,   6958.66000,    503.9,      0.0 !  !END!
276 ! X =    389.51200,   6958.03500,    475.3,      0.0 !  !END!
277 ! X =    389.57500,   6958.61000,    502.5,      0.0 !  !END!
278 ! X =    389.60500,   6958.80000,    523.1,      0.0 !  !END!
279 ! X =    389.60700,   6957.29300,    495.0,      0.0 !  !END!
280 ! X =    389.61400,   6958.66000,    505.8,      0.0 !  !END!
281 ! X =    389.61600,   6958.70000,    508.1,      0.0 !  !END!
282 ! X =    389.61900,   6958.59000,    500.7,      0.0 !  !END!
283 ! X =    389.65100,   6957.34500,    490.7,      0.0 !  !END!
284 ! X =    389.68600,   6958.54000,    494.8,      0.0 !  !END!
285 ! X =    389.70700,   6958.59000,    499.6,      0.0 !  !END!
286 ! X =    389.71800,   6958.63000,    502.1,      0.0 !  !END!
287 ! X =    389.73200,   6958.67000,    502.2,      0.0 !  !END!
288 ! X =    389.74400,   6959.06000,    527.1,      0.0 !  !END!
289 ! X =    389.74400,   6958.52000,    492.4,      0.0 !  !END!
290 ! X =    389.74800,   6959.20000,    516.6,      0.0 !  !END!
291 ! X =    389.75500,   6958.71000,    503.7,      0.0 !  !END!
292 ! X =    389.76100,   6959.13000,    520.7,      0.0 !  !END!
293 ! X =    389.76500,   6958.74000,    505.7,      0.0 !  !END!
294 ! X =    389.77900,   6958.50000,    491.2,      0.0 !  !END!
295 ! X =    389.78100,   6955.83000,    532.5,      0.0 !  !END!
296 ! X =    389.78100,   6955.89000,    531.0,      0.0 !  !END!
297 ! X =    389.78200,   6955.84000,    532.3,      0.0 !  !END!
298 ! X =    389.78200,   6955.84000,    532.3,      0.0 !  !END!
299 ! X =    389.78600,   6958.83000,    513.2,      0.0 !  !END!
300 ! X =    389.78800,   6955.86000,    531.3,      0.0 !  !END!
301 ! X =    389.78800,   6955.86000,    531.3,      0.0 !  !END!
302 ! X =    389.79700,   6955.95000,    529.2,      0.0 !  !END!
303 ! X =    389.79900,   6955.89000,    530.5,      0.0 !  !END!
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304 ! X = 389.81400, 6955.85000, 531.8, 0.0 ! !END!
305 ! X = 389.81400, 6958.48000, 490.2, 0.0 ! !END!
306 ! X = 389.81400, 6958.56000, 495.3, 0.0 ! !END!
307 ! X = 389.81600, 6957.24300, 493.0, 0.0 ! !END!
308 ! X = 389.81700, 6955.88000, 530.2, 0.0 ! !END!
309 ! X = 389.82400, 6956.82000, 508.4, 0.0 ! !END!
310 ! X = 389.82400, 6958.86000, 507.7, 0.0 ! !END!
311 ! X = 389.82400, 6958.86000, 507.7, 0.0 ! !END!
312 ! X = 389.82500, 6955.85000, 531.0, 0.0 ! !END!
313 ! X = 389.82900, 6955.88000, 529.7, 0.0 ! !END!
314 ! X = 389.83900, 6958.60000, 495.1, 0.0 ! !END!
315 ! X = 389.84000, 6955.85000, 530.5, 0.0 ! !END!
316 ! X = 389.84600, 6955.88000, 529.4, 0.0 ! !END!
317 ! X = 389.84800, 6958.64000, 495.5, 0.0 ! !END!
318 ! X = 389.85700, 6955.84000, 530.1, 0.0 ! !END!
319 ! X = 389.85800, 6958.68000, 497.2, 0.0 ! !END!
320 ! X = 389.86000, 6956.98000, 502.2, 0.0 ! !END!
321 ! X = 389.86100, 6955.99000, 525.5, 0.0 ! !END!
322 ! X = 389.86200, 6955.88000, 529.1, 0.0 ! !END!
323 ! X = 389.86300, 6958.74000, 499.6, 0.0 ! !END!
324 ! X = 389.86600, 6958.45000, 486.7, 0.0 ! !END!
325 ! X = 389.87100, 6957.02700, 499.7, 0.0 ! !END!
326 ! X = 389.87500, 6958.85000, 499.3, 0.0 ! !END!
327 ! X = 389.87500, 6957.58100, 483.1, 0.0 ! !END!
328 ! X = 389.89500, 6955.85000, 528.8, 0.0 ! !END!
329 ! X = 389.89900, 6957.16500, 493.7, 0.0 ! !END!
330 ! X = 389.90100, 6958.43000, 486.3, 0.0 ! !END!
331 ! X = 389.90200, 6955.88000, 528.7, 0.0 ! !END!
332 ! X = 389.90200, 6958.78000, 499.2, 0.0 ! !END!
333 ! X = 389.90800, 6955.92000, 527.7, 0.0 ! !END!
334 ! X = 389.90900, 6957.62000, 482.1, 0.0 ! !END!
335 ! X = 389.91500, 6958.86000, 498.1, 0.0 ! !END!
336 ! X = 389.91800, 6955.84000, 528.7, 0.0 ! !END!
337 ! X = 389.92100, 6957.29300, 489.4, 0.0 ! !END!
338 ! X = 389.92200, 6955.87000, 528.7, 0.0 ! !END!
339 ! X = 389.92600, 6958.54000, 489.1, 0.0 ! !END!
340 ! X = 389.92600, 6955.92000, 527.3, 0.0 ! !END!
341 ! X = 389.93300, 6955.85000, 528.7, 0.0 ! !END!
342 ! X = 389.93600, 6958.41000, 485.9, 0.0 ! !END!
343 ! X = 389.93700, 6955.87000, 528.7, 0.0 ! !END!
344 ! X = 389.93900, 6957.65500, 482.0, 0.0 ! !END!
345 ! X = 389.94300, 6955.92000, 527.2, 0.0 ! !END!
346 ! X = 389.94500, 6958.50000, 487.2, 0.0 ! !END!
347 ! X = 389.95100, 6956.87800, 506.6, 0.0 ! !END!
348 ! X = 389.95100, 6955.84000, 528.8, 0.0 ! !END!
349 ! X = 389.95400, 6955.87000, 528.7, 0.0 ! !END!
350 ! X = 389.95500, 6958.86000, 498.3, 0.0 ! !END!
351 ! X = 389.95900, 6955.98000, 524.4, 0.0 ! !END!
352 ! X = 389.96100, 6955.92000, 526.9, 0.0 ! !END!
353 ! X = 389.96200, 6957.60300, 483.4, 0.0 ! !END!
354 ! X = 389.96600, 6957.57400, 484.3, 0.0 ! !END!
355 ! X = 389.96700, 6955.84000, 528.8, 0.0 ! !END!
356 ! X = 389.96700, 6958.58000, 491.7, 0.0 ! !END!
357 ! X = 389.96800, 6958.39000, 485.2, 0.0 ! !END!
358 ! X = 389.96900, 6955.87000, 528.2, 0.0 ! !END!
359 ! X = 389.97400, 6958.62000, 492.9, 0.0 ! !END!
360 ! X = 389.97500, 6955.92000, 526.7, 0.0 ! !END!
361 ! X = 389.98000, 6958.67000, 493.7, 0.0 ! !END!
362 ! X = 389.98000, 6957.66300, 483.0, 0.0 ! !END!
363 ! X = 389.98500, 6955.87000, 527.9, 0.0 ! !END!
364 ! X = 389.99100, 6955.91000, 526.9, 0.0 ! !END!
365 ! X = 389.99400, 6958.78000, 495.1, 0.0 ! !END!
366 ! X = 389.99400, 6958.78000, 495.1, 0.0 ! !END!
367 ! X = 389.99800, 6958.72000, 493.3, 0.0 ! !END!
368 ! X = 390.00000, 6955.86000, 527.7, 0.0 ! !END!
369 ! X = 390.00700, 6955.91000, 526.7, 0.0 ! !END!
370 ! X = 390.01600, 6958.87000, 496.1, 0.0 ! !END!
371 ! X = 390.01700, 6957.46000, 486.9, 0.0 ! !END!
372 ! X = 390.02000, 6955.86000, 526.8, 0.0 ! !END!
373 ! X = 390.02200, 6955.91000, 526.1, 0.0 ! !END!
374 ! X = 390.03500, 6955.90000, 526.1, 0.0 ! !END!

375 ! X = 390.03800, 6955.86000, 526.4, 0.0 ! !END!
376 ! X = 390.04800, 6955.91000, 525.8, 0.0 ! !END!
377 ! X = 390.07500, 6955.85000, 526.0, 0.0 ! !END!
378 ! X = 390.07500, 6955.90000, 525.4, 0.0 ! !END!
379 ! X = 390.08000, 6957.72000, 486.8, 0.0 ! !END!
380 ! X = 390.08300, 6957.70100, 487.7, 0.0 ! !END!
381 ! X = 390.08700, 6958.38000, 484.2, 0.0 ! !END!
382 ! X = 390.09000, 6955.90000, 525.4, 0.0 ! !END!
383 ! X = 390.09700, 6958.53000, 486.6, 0.0 ! !END!
384 ! X = 390.10300, 6958.63000, 488.9, 0.0 ! !END!
385 ! X = 390.10800, 6958.67000, 488.8, 0.0 ! !END!
386 ! X = 390.11000, 6957.96100, 480.7, 0.0 ! !END!
387 ! X = 390.11300, 6958.71000, 490.2, 0.0 ! !END!
388 ! X = 390.11900, 6957.71600, 487.7, 0.0 ! !END!
389 ! X = 390.11900, 6958.74000, 491.4, 0.0 ! !END!
390 ! X = 390.12400, 6958.78000, 492.9, 0.0 ! !END!
391 ! X = 390.12700, 6958.82000, 493.0, 0.0 ! !END!
392 ! X = 390.13300, 6957.30500, 493.9, 0.0 ! !END!
393 ! X = 390.13700, 6958.89000, 493.4, 0.0 ! !END!
394 ! X = 390.14200, 6957.73800, 486.9, 0.0 ! !END!
395 ! X = 390.16500, 6957.76000, 485.8, 0.0 ! !END!
396 ! X = 390.17400, 6958.48000, 485.5, 0.0 ! !END!
397 ! X = 390.19700, 6957.92300, 482.0, 0.0 ! !END!
398 ! X = 390.19900, 6958.37000, 484.6, 0.0 ! !END!
399 ! X = 390.20100, 6958.59000, 489.3, 0.0 ! !END!
400 ! X = 390.20100, 6958.89000, 496.4, 0.0 ! !END!
401 ! X = 390.20200, 6955.80000, 526.6, 0.0 ! !END!
402 ! X = 390.20500, 6959.00000, 501.5, 0.0 ! !END!
403 ! X = 390.21000, 6957.77000, 486.0, 0.0 ! !END!
404 ! X = 390.21400, 6955.87000, 525.5, 0.0 ! !END!
405 ! X = 390.21700, 6958.48000, 486.9, 0.0 ! !END!
406 ! X = 390.21800, 6957.73300, 488.4, 0.0 ! !END!
407 ! X = 390.22600, 6958.64000, 491.1, 0.0 ! !END!
408 ! X = 390.22800, 6955.93000, 524.6, 0.0 ! !END!
409 ! X = 390.23100, 6958.68000, 492.2, 0.0 ! !END!
410 ! X = 390.23500, 6957.92000, 482.4, 0.0 ! !END!
411 ! X = 390.23600, 6958.72000, 493.0, 0.0 ! !END!
412 ! X = 390.24200, 6958.76000, 495.2, 0.0 ! !END!
413 ! X = 390.24300, 6958.89000, 498.7, 0.0 ! !END!
414 ! X = 390.24800, 6958.58000, 490.8, 0.0 ! !END!
415 ! X = 390.25100, 6958.80000, 496.8, 0.0 ! !END!
416 ! X = 390.26000, 6958.47000, 487.8, 0.0 ! !END!
417 ! X = 390.26800, 6958.09000, 480.9, 0.0 ! !END!
418 ! X = 390.27300, 6957.04800, 514.7, 0.0 ! !END!
419 ! X = 390.28100, 6958.31000, 483.9, 0.0 ! !END!
420 ! X = 390.28400, 6958.90000, 500.3, 0.0 ! !END!
421 ! X = 390.28700, 6957.70500, 492.5, 0.0 ! !END!
422 ! X = 390.29100, 6956.17000, 520.6, 0.0 ! !END!
423 ! X = 390.29300, 6957.66200, 495.3, 0.0 ! !END!
424 ! X = 390.29300, 6958.36000, 486.0, 0.0 ! !END!
425 ! X = 390.29400, 6957.25200, 502.6, 0.0 ! !END!
426 ! X = 390.29600, 6958.57000, 491.5, 0.0 ! !END!
427 ! X = 390.29900, 6958.67000, 493.5, 0.0 ! !END!
428 ! X = 390.30300, 6958.40000, 487.4, 0.0 ! !END!
429 ! X = 390.32000, 6958.44000, 488.1, 0.0 ! !END!
430 ! X = 390.32200, 6957.64400, 495.8, 0.0 ! !END!
431 ! X = 390.32400, 6958.12300, 481.2, 0.0 ! !END!
432 ! X = 390.32400, 6958.78000, 498.7, 0.0 ! !END!
433 ! X = 390.32500, 6957.69600, 494.3, 0.0 ! !END!
434 ! X = 390.32600, 6958.90000, 500.8, 0.0 ! !END!
435 ! X = 390.33700, 6958.48000, 488.3, 0.0 ! !END!
436 ! X = 390.33700, 6958.66000, 493.5, 0.0 ! !END!
437 ! X = 390.34000, 6957.77000, 486.0, 0.0 ! !END!
438 ! X = 390.35900, 6958.54000, 491.6, 0.0 ! !END!
439 ! X = 390.36100, 6957.64700, 494.7, 0.0 ! !END!
440 ! X = 390.36200, 6957.69900, 492.3, 0.0 ! !END!
441 ! X = 390.36700, 6958.91000, 502.7, 0.0 ! !END!
442 ! X = 390.36800, 6958.84000, 500.4, 0.0 ! !END!
443 ! X = 390.37200, 6958.77000, 499.3, 0.0 ! !END!
444 ! X = 390.37800, 6958.58000, 493.7, 0.0 ! !END!
445 ! X = 390.39200, 6957.14600, 514.9, 0.0 ! !END!

446 ! X = 390.39400, 6958.62000, 495.3, 0.0 ! !END!
447 ! X = 390.40400, 6957.76800, 485.9, 0.0 ! !END!
448 ! X = 390.40700, 6958.91000, 504.7, 0.0 ! !END!
449 ! X = 390.40900, 6958.66000, 497.7, 0.0 ! !END!
450 ! X = 390.43500, 6958.73000, 501.0, 0.0 ! !END!
451 ! X = 390.44800, 6958.92000, 507.2, 0.0 ! !END!
452 ! X = 390.45200, 6957.04100, 531.1, 0.0 ! !END!
453 ! X = 390.45300, 6958.42000, 491.5, 0.0 ! !END!
454 ! X = 390.45300, 6958.42000, 491.5, 0.0 ! !END!
455 ! X = 390.46000, 6958.78000, 505.4, 0.0 ! !END!
456 ! X = 390.47500, 6958.81000, 506.6, 0.0 ! !END!
457 ! X = 390.47800, 6957.18200, 517.8, 0.0 ! !END!
458 ! X = 390.48000, 6958.85000, 508.7, 0.0 ! !END!
459 ! X = 390.49800, 6958.94000, 509.9, 0.0 ! !END!
460 ! X = 390.51900, 6958.89000, 509.1, 0.0 ! !END!
461 ! X = 390.53600, 6958.26100, 482.7, 0.0 ! !END!
462 ! X = 390.54200, 6958.42000, 493.7, 0.0 ! !END!
463 ! X = 390.54700, 6958.35000, 489.0, 0.0 ! !END!
464 ! X = 390.56500, 6958.25600, 483.4, 0.0 ! !END!
465 ! X = 390.57100, 6958.96000, 513.4, 0.0 ! !END!
466 ! X = 390.57600, 6958.42000, 493.9, 0.0 ! !END!
467 ! X = 390.58000, 6958.35000, 489.7, 0.0 ! !END!
468 ! X = 390.58000, 6958.35000, 489.7, 0.0 ! !END!
469 ! X = 390.59400, 6958.67000, 507.9, 0.0 ! !END!
470 ! X = 390.60100, 6956.46000, 546.6, 0.0 ! !END!
471 ! X = 390.60100, 6958.25600, 486.1, 0.0 ! !END!
472 ! X = 390.60800, 6958.41000, 494.4, 0.0 ! !END!
473 ! X = 390.61000, 6958.34000, 490.0, 0.0 ! !END!
474 ! X = 390.61400, 6955.66000, 542.8, 0.0 ! !END!
475 ! X = 390.62300, 6955.74000, 543.1, 0.0 ! !END!
476 ! X = 390.62500, 6958.25200, 487.2, 0.0 ! !END!
477 ! X = 390.63200, 6955.79000, 540.4, 0.0 ! !END!
478 ! X = 390.63900, 6955.84000, 539.8, 0.0 ! !END!
479 ! X = 390.64100, 6958.33000, 490.2, 0.0 ! !END!
480 ! X = 390.64700, 6955.89000, 538.5, 0.0 ! !END!
481 ! X = 390.64800, 6958.39000, 496.1, 0.0 ! !END!
482 ! X = 390.64800, 6958.39000, 496.1, 0.0 ! !END!
483 ! X = 390.66100, 6955.93000, 537.5, 0.0 ! !END!
484 ! X = 390.66800, 6958.25000, 488.1, 0.0 ! !END!
485 ! X = 390.67300, 6958.33000, 491.7, 0.0 ! !END!
486 ! X = 390.68000, 6958.41000, 498.6, 0.0 ! !END!
487 ! X = 390.68200, 6955.66000, 550.0, 0.0 ! !END!
488 ! X = 390.68800, 6955.61000, 550.9, 0.0 ! !END!
489 ! X = 390.68800, 6958.24300, 488.7, 0.0 ! !END!
490 ! X = 390.70400, 6958.32000, 491.1, 0.0 ! !END!
491 ! X = 390.70700, 6958.51000, 503.3, 0.0 ! !END!
492 ! X = 390.71000, 6955.99000, 534.8, 0.0 ! !END!
493 ! X = 390.71300, 6958.40000, 499.1, 0.0 ! !END!
494 ! X = 390.71700, 6958.46000, 500.6, 0.0 ! !END!
495 ! X = 390.71800, 6958.54000, 506.7, 0.0 ! !END!
496 ! X = 390.72200, 6958.57000, 514.4, 0.0 ! !END!
497 ! X = 390.72500, 6955.74000, 547.3, 0.0 ! !END!
498 ! X = 390.72700, 6958.60000, 517.5, 0.0 ! !END!
499 ! X = 390.72900, 6958.23900, 488.7, 0.0 ! !END!
500 ! X = 390.73100, 6958.63000, 519.0, 0.0 ! !END!
501 ! X = 390.73200, 6955.78000, 544.3, 0.0 ! !END!
502 ! X = 390.73500, 6958.66000, 519.1, 0.0 ! !END!
503 ! X = 390.73600, 6958.32000, 492.6, 0.0 ! !END!
504 ! X = 390.73900, 6955.83000, 540.9, 0.0 ! !END!
505 ! X = 390.73900, 6958.69000, 519.4, 0.0 ! !END!
506 ! X = 390.74400, 6958.73000, 523.9, 0.0 ! !END!
507 ! X = 390.74600, 6955.88000, 540.9, 0.0 ! !END!
508 ! X = 390.74700, 6958.40000, 499.9, 0.0 ! !END!
509 ! X = 390.74800, 6958.76000, 526.2, 0.0 ! !END!
510 ! X = 390.75300, 6955.59000, 554.8, 0.0 ! !END!
511 ! X = 390.75600, 6958.82000, 526.8, 0.0 ! !END!
512 ! X = 390.75800, 6955.93000, 540.5, 0.0 ! !END!
513 ! X = 390.76000, 6958.23400, 489.1, 0.0 ! !END!
514 ! X = 390.76000, 6958.85000, 525.7, 0.0 ! !END!
515 ! X = 390.76300, 6958.88000, 527.3, 0.0 ! !END!
516 ! X = 390.76600, 6955.98000, 537.9, 0.0 ! !END!

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517 ! X =    390.76600,  6958.91000,   527.9,      0.0 !  !END!
518 ! X =    390.76700,  6955.66000,   551.2,      0.0 !  !END!
519 ! X =    390.76700,  6958.32000,   494.0,      0.0 !  !END!
520 ! X =    390.77000,  6958.94000,   528.3,      0.0 !  !END!
521 ! X =    390.77500,  6958.78000,   528.5,      0.0 !  !END!
522 ! X =    390.77500,  6958.78000,   528.5,      0.0 !  !END!
523 ! X =    390.77600,  6958.98000,   527.1,      0.0 !  !END!
524 ! X =    390.77900,  6958.46000,   504.5,      0.0 !  !END!
525 ! X =    390.78000,  6958.39000,   500.1,      0.0 !  !END!
526 ! X =    390.78800,  6958.22900,   490.3,      0.0 !  !END!
527 ! X =    390.79600,  6958.54000,   513.8,      0.0 !  !END!
528 ! X =    390.80100,  6958.31000,   495.4,      0.0 !  !END!
529 ! X =    390.81300,  6955.73000,   551.8,      0.0 !  !END!
530 ! X =    390.81700,  6958.39000,   503.4,      0.0 !  !END!
531 ! X =    390.81700,  6958.45000,   505.6,      0.0 !  !END!
532 ! X =    390.81800,  6958.68000,   529.0,      0.0 !  !END!
533 ! X =    390.82000,  6955.77000,   549.5,      0.0 !  !END!
534 ! X =    390.82300,  6958.25000,   493.7,      0.0 !  !END!
535 ! X =    390.82300,  6958.59000,   524.2,      0.0 !  !END!
536 ! X =    390.82600,  6955.82000,   548.6,      0.0 !  !END!
537 ! X =    390.82600,  6958.54000,   516.4,      0.0 !  !END!
538 ! X =    390.82800,  6958.77000,   536.0,      0.0 !  !END!
539 ! X =    390.82800,  6959.05000,   534.6,      0.0 !  !END!
540 ! X =    390.83000,  6955.64000,   557.7,      0.0 !  !END!
541 ! X =    390.83100,  6958.62000,   527.7,      0.0 !  !END!
542 ! X =    390.83300,  6955.86000,   547.5,      0.0 !  !END!
543 ! X =    390.83400,  6955.91000,   546.2,      0.0 !  !END!
544 ! X =    390.83900,  6958.32000,   498.4,      0.0 !  !END!
545 ! X =    390.83900,  6958.32000,   498.4,      0.0 !  !END!
546 ! X =    390.84200,  6958.37000,   503.8,      0.0 !  !END!
547 ! X =    390.84700,  6958.45000,   510.4,      0.0 !  !END!
548 ! X =    390.85300,  6955.48000,   571.9,      0.0 !  !END!
549 ! X =    390.85300,  6958.68000,   534.7,      0.0 !  !END!
550 ! X =    390.85600,  6955.94100,   546.6,      0.0 !  !END!
551 ! X =    390.85600,  6958.54000,   519.5,      0.0 !  !END!
552 ! X =    390.85700,  6958.82000,   543.5,      0.0 !  !END!
553 ! X =    390.85800,  6955.55000,   565.8,      0.0 !  !END!
554 ! X =    390.85800,  6958.77000,   540.1,      0.0 !  !END!
555 ! X =    390.86000,  6958.98000,   539.4,      0.0 !  !END!
556 ! X =    390.86300,  6958.85000,   546.0,      0.0 !  !END!
557 ! X =    390.86500,  6958.88000,   545.3,      0.0 !  !END!
558 ! X =    390.86500,  6958.95000,   540.6,      0.0 !  !END!
559 ! X =    390.86700,  6958.91000,   543.8,      0.0 !  !END!
560 ! X =    390.87300,  6955.64000,   558.6,      0.0 !  !END!
561 ! X =    390.87700,  6958.44000,   513.3,      0.0 !  !END!
562 ! X =    390.87800,  6955.98000,   545.5,      0.0 !  !END!
563 ! X =    390.88300,  6958.66000,   538.2,      0.0 !  !END!
564 ! X =    390.88400,  6958.33000,   501.2,      0.0 !  !END!
565 ! X =    390.88600,  6958.76000,   541.7,      0.0 !  !END!
566 ! X =    390.88700,  6959.08000,   542.1,      0.0 !  !END!
567 ! X =    390.88900,  6958.36000,   505.3,      0.0 !  !END!
568 ! X =    390.89200,  6958.26500,   497.9,      0.0 !  !END!
569 ! X =    390.89300,  6958.40000,   510.1,      0.0 !  !END!
570 ! X =    390.89400,  6958.29200,   498.8,      0.0 !  !END!
571 ! X =    390.89700,  6958.58000,   529.8,      0.0 !  !END!
572 ! X =    390.90400,  6958.51000,   516.7,      0.0 !  !END!
573 ! X =    390.90800,  6958.54000,   521.1,      0.0 !  !END!
574 ! X =    390.90900,  6958.99000,   542.2,      0.0 !  !END!
575 ! X =    390.91100,  6958.44000,   513.8,      0.0 !  !END!
576 ! X =    390.91300,  6958.66000,   539.4,      0.0 !  !END!
577 ! X =    390.91600,  6955.53000,   570.5,      0.0 !  !END!
578 ! X =    390.91800,  6955.72000,   556.9,      0.0 !  !END!
579 ! X =    390.92200,  6955.63000,   558.5,      0.0 !  !END!
580 ! X =    390.92300,  6958.75000,   543.4,      0.0 !  !END!
581 ! X =    390.92400,  6955.77000,   555.5,      0.0 !  !END!
582 ! X =    390.92700,  6958.61000,   537.5,      0.0 !  !END!
583 ! X =    390.92700,  6958.96000,   545.7,      0.0 !  !END!
584 ! X =    390.93200,  6955.81000,   552.8,      0.0 !  !END!
585 ! X =    390.93500,  6955.42000,   576.7,      0.0 !  !END!
586 ! X =    390.93800,  6955.86000,   552.5,      0.0 !  !END!
587 ! X =    390.93900,  6958.80000,   548.7,      0.0 !  !END!
```

588 ! X = 390.94500, 6958.85000, 550.9, 0.0 ! !END!
589 ! X = 390.94600, 6958.66000, 539.0, 0.0 ! !END!
590 ! X = 390.94700, 6958.88000, 550.3, 0.0 ! !END!
591 ! X = 390.94700, 6958.94000, 547.8, 0.0 ! !END!
592 ! X = 390.94700, 6958.28300, 498.4, 0.0 ! !END!
593 ! X = 390.94900, 6958.91000, 549.4, 0.0 ! !END!
594 ! X = 390.95000, 6955.91000, 552.0, 0.0 ! !END!
595 ! X = 390.96200, 6958.32000, 503.1, 0.0 ! !END!
596 ! X = 390.96200, 6959.13000, 544.6, 0.0 ! !END!
597 ! X = 390.96200, 6959.33000, 550.5, 0.0 ! !END!
598 ! X = 390.96200, 6959.54000, 563.3, 0.0 ! !END!
599 ! X = 390.96600, 6955.53000, 572.4, 0.0 ! !END!
600 ! X = 390.96700, 6958.36000, 508.1, 0.0 ! !END!
601 ! X = 390.96700, 6959.08000, 545.0, 0.0 ! !END!
602 ! X = 390.97100, 6959.06000, 544.9, 0.0 ! !END!
603 ! X = 390.97200, 6958.39000, 510.6, 0.0 ! !END!
604 ! X = 390.97300, 6958.74000, 543.2, 0.0 ! !END!
605 ! X = 390.97300, 6957.40700, 493.1, 0.0 ! !END!
606 ! X = 390.97600, 6955.63000, 562.5, 0.0 ! !END!
607 ! X = 390.97600, 6958.43000, 514.3, 0.0 ! !END!
608 ! X = 390.98100, 6958.46000, 516.6, 0.0 ! !END!
609 ! X = 390.98600, 6958.49000, 518.8, 0.0 ! !END!
610 ! X = 390.98700, 6955.97800, 549.9, 0.0 ! !END!
611 ! X = 390.98900, 6955.73000, 560.5, 0.0 ! !END!
612 ! X = 390.98900, 6958.66000, 539.4, 0.0 ! !END!
613 ! X = 390.99200, 6958.53000, 523.5, 0.0 ! !END!
614 ! X = 390.99500, 6958.61000, 535.1, 0.0 ! !END!
615 ! X = 390.99700, 6959.23000, 548.9, 0.0 ! !END!
616 ! X = 391.00200, 6958.57000, 531.1, 0.0 ! !END!
617 ! X = 391.00200, 6958.77000, 546.7, 0.0 ! !END!
618 ! X = 391.00500, 6955.41000, 577.6, 0.0 ! !END!
619 ! X = 391.01000, 6955.80000, 559.0, 0.0 ! !END!
620 ! X = 391.01500, 6959.13000, 549.5, 0.0 ! !END!
621 ! X = 391.01700, 6958.68000, 540.1, 0.0 ! !END!
622 ! X = 391.02000, 6958.36000, 511.4, 0.0 ! !END!
623 ! X = 391.02100, 6955.62000, 569.3, 0.0 ! !END!
624 ! X = 391.02400, 6958.42000, 515.4, 0.0 ! !END!
625 ! X = 391.02500, 6955.91000, 556.8, 0.0 ! !END!
626 ! X = 391.02500, 6959.01000, 550.9, 0.0 ! !END!
627 ! X = 391.02800, 6955.50000, 576.1, 0.0 ! !END!
628 ! X = 391.02900, 6955.85000, 559.9, 0.0 ! !END!
629 ! X = 391.02900, 6958.71000, 541.8, 0.0 ! !END!
630 ! X = 391.02900, 6957.31000, 502.0, 0.0 ! !END!
631 ! X = 391.03000, 6958.31800, 506.4, 0.0 ! !END!
632 ! X = 391.03300, 6958.46000, 520.3, 0.0 ! !END!
633 ! X = 391.03300, 6958.98000, 551.5, 0.0 ! !END!
634 ! X = 391.03500, 6957.31600, 501.6, 0.0 ! !END!
635 ! X = 391.03500, 6958.79000, 548.8, 0.0 ! !END!
636 ! X = 391.03700, 6955.55000, 573.0, 0.0 ! !END!
637 ! X = 391.03900, 6958.88000, 551.4, 0.0 ! !END!
638 ! X = 391.04000, 6959.24000, 552.6, 0.0 ! !END!
639 ! X = 391.04200, 6958.51000, 523.2, 0.0 ! !END!
640 ! X = 391.04200, 6958.91000, 551.3, 0.0 ! !END!
641 ! X = 391.04300, 6958.95000, 550.5, 0.0 ! !END!
642 ! X = 391.04700, 6958.55000, 527.4, 0.0 ! !END!
643 ! X = 391.04800, 6958.84000, 551.3, 0.0 ! !END!
644 ! X = 391.04900, 6955.96400, 553.0, 0.0 ! !END!
645 ! X = 391.04900, 6959.14000, 551.4, 0.0 ! !END!
646 ! X = 391.05500, 6958.58000, 531.1, 0.0 ! !END!
647 ! X = 391.05600, 6958.62000, 536.1, 0.0 ! !END!
648 ! X = 391.05800, 6959.44000, 555.0, 0.0 ! !END!
649 ! X = 391.06500, 6959.38000, 554.0, 0.0 ! !END!
650 ! X = 391.06900, 6955.40000, 579.0, 0.0 ! !END!
651 ! X = 391.07500, 6958.65000, 538.0, 0.0 ! !END!
652 ! X = 391.07600, 6955.61000, 573.8, 0.0 ! !END!
653 ! X = 391.07600, 6959.32000, 555.4, 0.0 ! !END!
654 ! X = 391.07900, 6958.39000, 515.2, 0.0 ! !END!
655 ! X = 391.08000, 6959.23000, 555.7, 0.0 ! !END!
656 ! X = 391.08100, 6955.69000, 572.3, 0.0 ! !END!
657 ! X = 391.08100, 6959.28000, 556.2, 0.0 ! !END!
658 ! X = 391.08200, 6958.32900, 508.5, 0.0 ! !END!

659 ! X = 391.08300, 6957.39500, 494.4, 0.0 ! !END!
660 ! X = 391.08400, 6957.43300, 492.4, 0.0 ! !END!
661 ! X = 391.08800, 6955.74000, 567.0, 0.0 ! !END!
662 ! X = 391.09600, 6959.69000, 559.5, 0.0 ! !END!
663 ! X = 391.10000, 6959.45000, 553.4, 0.0 ! !END!
664 ! X = 391.10200, 6958.46000, 520.2, 0.0 ! !END!
665 ! X = 391.10300, 6959.15000, 553.5, 0.0 ! !END!
666 ! X = 391.10500, 6958.71000, 540.3, 0.0 ! !END!
667 ! X = 391.10500, 6958.71000, 540.3, 0.0 ! !END!
668 ! X = 391.11000, 6958.51000, 522.6, 0.0 ! !END!
669 ! X = 391.11100, 6955.79000, 563.8, 0.0 ! !END!
670 ! X = 391.11300, 6959.24000, 557.1, 0.0 ! !END!
671 ! X = 391.11300, 6959.33000, 555.6, 0.0 ! !END!
672 ! X = 391.11600, 6959.37000, 553.5, 0.0 ! !END!
673 ! X = 391.11600, 6958.55000, 527.5, 0.0 ! !END!
674 ! X = 391.11700, 6958.40000, 517.5, 0.0 ! !END!
675 ! X = 391.11800, 6955.84000, 563.9, 0.0 ! !END!
676 ! X = 391.12000, 6959.55000, 555.1, 0.0 ! !END!
677 ! X = 391.12100, 6958.36900, 514.1, 0.0 ! !END!
678 ! X = 391.12200, 6955.95100, 555.2, 0.0 ! !END!
679 ! X = 391.12500, 6955.89000, 562.9, 0.0 ! !END!
680 ! X = 391.12900, 6958.59000, 533.7, 0.0 ! !END!
681 ! X = 391.13000, 6958.67000, 538.4, 0.0 ! !END!
682 ! X = 391.13300, 6959.44000, 553.3, 0.0 ! !END!
683 ! X = 391.13500, 6958.63000, 538.1, 0.0 ! !END!
684 ! X = 391.13600, 6959.16000, 554.9, 0.0 ! !END!
685 ! X = 391.14500, 6955.31000, 579.3, 0.0 ! !END!
686 ! X = 391.14700, 6955.72000, 569.2, 0.0 ! !END!
687 ! X = 391.15300, 6958.48000, 520.2, 0.0 ! !END!
688 ! X = 391.15500, 6955.40000, 578.0, 0.0 ! !END!
689 ! X = 391.16000, 6958.42000, 518.6, 0.0 ! !END!
690 ! X = 391.16000, 6958.52000, 522.6, 0.0 ! !END!
691 ! X = 391.16100, 6959.36000, 553.8, 0.0 ! !END!
692 ! X = 391.16100, 6955.58000, 572.1, 0.0 ! !END!
693 ! X = 391.16200, 6955.62000, 573.4, 0.0 ! !END!
694 ! X = 391.16300, 6959.17000, 554.9, 0.0 ! !END!
695 ! X = 391.16400, 6958.38000, 514.2, 0.0 ! !END!
696 ! X = 391.16500, 6959.24000, 556.6, 0.0 ! !END!
697 ! X = 391.16800, 6957.85900, 491.6, 0.0 ! !END!
698 ! X = 391.16800, 6959.28000, 556.0, 0.0 ! !END!
699 ! X = 391.16800, 6958.88000, 550.5, 0.0 ! !END!
700 ! X = 391.16800, 6958.88000, 550.5, 0.0 ! !END!
701 ! X = 391.17100, 6955.45000, 578.0, 0.0 ! !END!
702 ! X = 391.17300, 6955.49000, 576.1, 0.0 ! !END!
703 ! X = 391.17300, 6958.56000, 527.6, 0.0 ! !END!
704 ! X = 391.17600, 6959.29000, 555.5, 0.0 ! !END!
705 ! X = 391.17800, 6955.28000, 579.1, 0.0 ! !END!
706 ! X = 391.18000, 6958.66000, 535.9, 0.0 ! !END!
707 ! X = 391.18000, 6958.66000, 535.9, 0.0 ! !END!
708 ! X = 391.18000, 6958.80000, 545.0, 0.0 ! !END!
709 ! X = 391.18100, 6958.76000, 540.8, 0.0 ! !END!
710 ! X = 391.18200, 6955.53000, 573.0, 0.0 ! !END!
711 ! X = 391.18300, 6958.62000, 533.3, 0.0 ! !END!
712 ! X = 391.18700, 6959.18000, 554.8, 0.0 ! !END!
713 ! X = 391.18900, 6959.44000, 551.7, 0.0 ! !END!
714 ! X = 391.19300, 6958.70000, 535.2, 0.0 ! !END!
715 ! X = 391.19700, 6955.73000, 564.8, 0.0 ! !END!
716 ! X = 391.20200, 6959.37000, 551.9, 0.0 ! !END!
717 ! X = 391.20200, 6958.36700, 511.6, 0.0 ! !END!
718 ! X = 391.20500, 6958.43000, 516.4, 0.0 ! !END!
719 ! X = 391.20700, 6958.57000, 527.1, 0.0 ! !END!
720 ! X = 391.20700, 6955.94000, 552.4, 0.0 ! !END!
721 ! X = 391.20800, 6955.86000, 557.8, 0.0 ! !END!
722 ! X = 391.21100, 6958.74000, 535.2, 0.0 ! !END!
723 ! X = 391.21100, 6958.83000, 541.8, 0.0 ! !END!
724 ! X = 391.21300, 6959.18000, 554.8, 0.0 ! !END!
725 ! X = 391.21500, 6955.78000, 560.7, 0.0 ! !END!
726 ! X = 391.21600, 6959.29000, 554.4, 0.0 ! !END!
727 ! X = 391.22100, 6958.47000, 517.9, 0.0 ! !END!
728 ! X = 391.22300, 6958.62000, 527.0, 0.0 ! !END!
729 ! X = 391.23000, 6955.56000, 566.4, 0.0 ! !END!

730 ! X = 391.23200, 6958.51000, 519.0, 0.0 ! !END!
731 ! X = 391.23600, 6958.96000, 545.5, 0.0 ! !END!
732 ! X = 391.23900, 6959.19000, 554.0, 0.0 ! !END!
733 ! X = 391.24000, 6956.41600, 533.2, 0.0 ! !END!
734 ! X = 391.24200, 6959.42000, 546.7, 0.0 ! !END!
735 ! X = 391.24200, 6958.39000, 512.1, 0.0 ! !END!
736 ! X = 391.24300, 6958.69000, 528.8, 0.0 ! !END!
737 ! X = 391.24500, 6958.88000, 537.7, 0.0 ! !END!
738 ! X = 391.24600, 6959.36000, 548.8, 0.0 ! !END!
739 ! X = 391.24600, 6955.63000, 563.3, 0.0 ! !END!
740 ! X = 391.24600, 6959.29000, 553.7, 0.0 ! !END!
741 ! X = 391.24800, 6958.81000, 535.0, 0.0 ! !END!
742 ! X = 391.25000, 6958.74000, 530.8, 0.0 ! !END!
743 ! X = 391.25100, 6955.73000, 559.8, 0.0 ! !END!
744 ! X = 391.25300, 6958.60000, 523.9, 0.0 ! !END!
745 ! X = 391.25400, 6955.35000, 571.9, 0.0 ! !END!
746 ! X = 391.25800, 6958.46000, 515.1, 0.0 ! !END!
747 ! X = 391.26000, 6959.60000, 550.2, 0.0 ! !END!
748 ! X = 391.26200, 6959.00000, 547.1, 0.0 ! !END!
749 ! X = 391.26500, 6959.19000, 554.1, 0.0 ! !END!
750 ! X = 391.26800, 6955.26000, 573.4, 0.0 ! !END!
751 ! X = 391.26800, 6955.26000, 573.4, 0.0 ! !END!
752 ! X = 391.26900, 6958.52000, 517.4, 0.0 ! !END!
753 ! X = 391.26900, 6959.03000, 547.7, 0.0 ! !END!
754 ! X = 391.27400, 6958.39800, 511.0, 0.0 ! !END!
755 ! X = 391.27500, 6959.29000, 554.3, 0.0 ! !END!
756 ! X = 391.27800, 6958.85000, 530.5, 0.0 ! !END!
757 ! X = 391.28200, 6959.40000, 543.4, 0.0 ! !END!
758 ! X = 391.28300, 6958.67000, 522.5, 0.0 ! !END!
759 ! X = 391.28300, 6958.80000, 530.6, 0.0 ! !END!
760 ! X = 391.28400, 6958.97000, 544.0, 0.0 ! !END!
761 ! X = 391.29100, 6958.72000, 526.2, 0.0 ! !END!
762 ! X = 391.29100, 6958.72000, 526.2, 0.0 ! !END!
763 ! X = 391.29100, 6959.19000, 554.2, 0.0 ! !END!
764 ! X = 391.29200, 6958.89000, 532.1, 0.0 ! !END!
765 ! X = 391.29300, 6958.94000, 538.6, 0.0 ! !END!
766 ! X = 391.29400, 6958.46000, 513.0, 0.0 ! !END!
767 ! X = 391.29600, 6955.41000, 563.2, 0.0 ! !END!
768 ! X = 391.29700, 6955.78000, 554.3, 0.0 ! !END!
769 ! X = 391.30000, 6955.61000, 559.6, 0.0 ! !END!
770 ! X = 391.30200, 6955.86000, 550.7, 0.0 ! !END!
771 ! X = 391.30200, 6955.92400, 548.1, 0.0 ! !END!
772 ! X = 391.30300, 6955.46000, 561.1, 0.0 ! !END!
773 ! X = 391.30400, 6959.28000, 555.3, 0.0 ! !END!
774 ! X = 391.30500, 6959.35000, 549.1, 0.0 ! !END!
775 ! X = 391.30800, 6955.72000, 557.8, 0.0 ! !END!
776 ! X = 391.31000, 6955.51000, 562.0, 0.0 ! !END!
777 ! X = 391.31400, 6958.40800, 512.2, 0.0 ! !END!
778 ! X = 391.31800, 6955.56000, 561.0, 0.0 ! !END!
779 ! X = 391.31800, 6959.19000, 554.2, 0.0 ! !END!
780 ! X = 391.32200, 6958.62000, 521.8, 0.0 ! !END!
781 ! X = 391.32600, 6958.55000, 515.4, 0.0 ! !END!
782 ! X = 391.32900, 6958.58000, 518.9, 0.0 ! !END!
783 ! X = 391.33200, 6958.49000, 512.9, 0.0 ! !END!
784 ! X = 391.34200, 6958.65000, 521.8, 0.0 ! !END!
785 ! X = 391.34400, 6959.04000, 547.2, 0.0 ! !END!
786 ! X = 391.34600, 6959.21000, 554.3, 0.0 ! !END!
787 ! X = 391.35000, 6958.69000, 522.1, 0.0 ! !END!
788 ! X = 391.35300, 6958.79000, 526.9, 0.0 ! !END!
789 ! X = 391.35400, 6955.62000, 557.2, 0.0 ! !END!
790 ! X = 391.35400, 6958.73000, 522.9, 0.0 ! !END!
791 ! X = 391.35400, 6958.76000, 525.2, 0.0 ! !END!
792 ! X = 391.36000, 6958.82000, 527.7, 0.0 ! !END!
793 ! X = 391.36000, 6958.82000, 527.7, 0.0 ! !END!
794 ! X = 391.36500, 6955.71000, 554.6, 0.0 ! !END!
795 ! X = 391.36800, 6959.02000, 544.7, 0.0 ! !END!
796 ! X = 391.37200, 6958.88000, 529.8, 0.0 ! !END!
797 ! X = 391.37400, 6955.77000, 550.2, 0.0 ! !END!
798 ! X = 391.37400, 6958.97000, 539.6, 0.0 ! !END!
799 ! X = 391.37800, 6958.94000, 535.9, 0.0 ! !END!
800 ! X = 391.37900, 6955.84000, 548.1, 0.0 ! !END!

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801 ! X =    391.38000,  6958.91000,    531.4,      0.0 !  !END!
802 ! X =    391.38500,  6955.91100,    543.9,      0.0 !  !END!
803 ! X =    391.38600,  6957.78900,    491.2,      0.0 !  !END!
804 ! X =    391.38700,  6958.51000,    510.8,      0.0 !  !END!
805 ! X =    391.38700,  6958.51000,    510.8,      0.0 !  !END!
806 ! X =    391.38800,  6959.23000,    551.3,      0.0 !  !END!
807 ! X =    391.39700,  6959.26000,    549.4,      0.0 !  !END!
808 ! X =    391.40400,  6959.01000,    541.9,      0.0 !  !END!
809 ! X =    391.40400,  6959.01000,    541.9,      0.0 !  !END!
810 ! X =    391.41300,  6959.27000,    547.2,      0.0 !  !END!
811 ! X =    391.42900,  6955.61000,    550.2,      0.0 !  !END!
812 ! X =    391.43400,  6955.73000,    546.8,      0.0 !  !END!
813 ! X =    391.43500,  6955.67000,    547.6,      0.0 !  !END!
814 ! X =    391.43500,  6955.70000,    547.3,      0.0 !  !END!
815 ! X =    391.43500,  6959.39000,    537.1,      0.0 !  !END!
816 ! X =    391.44200,  6955.76000,    544.0,      0.0 !  !END!
817 ! X =    391.44500,  6955.79000,    542.4,      0.0 !  !END!
818 ! X =    391.44600,  6955.81000,    541.4,      0.0 !  !END!
819 ! X =    391.45000,  6955.24000,    576.5,      0.0 !  !END!
820 ! X =    391.48200,  6955.81000,    538.3,      0.0 !  !END!
821 ! X =    391.48600,  6957.20700,    497.6,      0.0 !  !END!
822 ! X =    391.48800,  6955.76000,    541.3,      0.0 !  !END!
823 ! X =    391.48800,  6955.73000,    542.9,      0.0 !  !END!
824 ! X =    391.48900,  6955.88900,    535.9,      0.0 !  !END!
825 ! X =    391.49300,  6955.95100,    534.5,      0.0 !  !END!
826 ! X =    391.50000,  6955.81000,    537.4,      0.0 !  !END!
827 ! X =    391.50100,  6955.69000,    542.9,      0.0 !  !END!
828 ! X =    391.50300,  6956.01100,    529.8,      0.0 !  !END!
829 ! X =    391.50500,  6955.75000,    541.7,      0.0 !  !END!
830 ! X =    391.50800,  6955.62000,    543.1,      0.0 !  !END!
831 ! X =    391.51000,  6955.54000,    550.8,      0.0 !  !END!
832 ! X =    391.51100,  6959.22000,    542.2,      0.0 !  !END!
833 ! X =    391.51100,  6956.07500,    529.4,      0.0 !  !END!
834 ! X =    391.51400,  6956.13100,    528.2,      0.0 !  !END!
835 ! X =    391.51500,  6955.73000,    542.2,      0.0 !  !END!
836 ! X =    391.52300,  6955.80000,    536.7,      0.0 !  !END!
837 ! X =    391.52600,  6955.75000,    539.6,      0.0 !  !END!
838 ! X =    391.52700,  6956.20500,    524.7,      0.0 !  !END!
839 ! X =    391.53600,  6955.54000,    548.9,      0.0 !  !END!
840 ! X =    391.54100,  6955.60000,    544.3,      0.0 !  !END!
841 ! X =    391.54600,  6955.64000,    542.7,      0.0 !  !END!
842 ! X =    391.54700,  6955.80000,    536.6,      0.0 !  !END!
843 ! X =    391.55500,  6955.55000,    547.8,      0.0 !  !END!
844 ! X =    391.56300,  6955.71000,    540.7,      0.0 !  !END!
845 ! X =    391.56300,  6955.61000,    543.1,      0.0 !  !END!
846 ! X =    391.56500,  6955.69000,    541.1,      0.0 !  !END!
847 ! X =    391.56600,  6955.72000,    540.2,      0.0 !  !END!
848 ! X =    391.56700,  6955.79000,    536.9,      0.0 !  !END!
849 ! X =    391.56900,  6955.64000,    542.5,      0.0 !  !END!
850 ! X =    391.57100,  6955.75000,    538.7,      0.0 !  !END!
851 ! X =    391.57400,  6955.86500,    534.5,      0.0 !  !END!
852 ! X =    391.58000,  6955.54000,    548.1,      0.0 !  !END!
853 ! X =    391.58200,  6955.92500,    532.8,      0.0 !  !END!
854 ! X =    391.58400,  6955.60000,    543.3,      0.0 !  !END!
855 ! X =    391.58800,  6955.64000,    542.3,      0.0 !  !END!
856 ! X =    391.58800,  6955.98300,    530.0,      0.0 !  !END!
857 ! X =    391.59000,  6955.69000,    540.1,      0.0 !  !END!
858 ! X =    391.59400,  6955.79000,    535.3,      0.0 !  !END!
859 ! X =    391.59600,  6956.04400,    528.3,      0.0 !  !END!
860 ! X =    391.59700,  6955.73000,    538.7,      0.0 !  !END!
861 ! X =    391.60100,  6955.55000,    547.1,      0.0 !  !END!
862 ! X =    391.60300,  6956.09500,    526.7,      0.0 !  !END!
863 ! X =    391.60700,  6955.69000,    539.3,      0.0 !  !END!
864 ! X =    391.60700,  6955.60000,    543.0,      0.0 !  !END!
865 ! X =    391.61100,  6955.62000,    542.2,      0.0 !  !END!
866 ! X =    391.61200,  6955.79000,    534.8,      0.0 !  !END!
867 ! X =    391.61500,  6955.64000,    541.5,      0.0 !  !END!
868 ! X =    391.61500,  6956.19500,    523.0,      0.0 !  !END!
869 ! X =    391.61600,  6955.72000,    538.1,      0.0 !  !END!
870 ! X =    391.61700,  6955.81000,    534.3,      0.0 !  !END!
871 ! X =    391.61900,  6955.54000,    548.3,      0.0 !  !END!
```

872 ! X = 391.62100, 6955.86000, 532.0, 0.0 ! !END!
873 ! X = 391.62600, 6955.88000, 531.5, 0.0 ! !END!
874 ! X = 391.62700, 6955.78000, 534.3, 0.0 ! !END!
875 ! X = 391.62800, 6955.90000, 531.1, 0.0 ! !END!
876 ! X = 391.62800, 6955.69000, 538.3, 0.0 ! !END!
877 ! X = 391.63100, 6955.92000, 530.6, 0.0 ! !END!
878 ! X = 391.63400, 6955.94000, 529.6, 0.0 ! !END!
879 ! X = 391.63500, 6955.71000, 537.7, 0.0 ! !END!
880 ! X = 391.63600, 6955.96000, 528.7, 0.0 ! !END!
881 ! X = 391.63700, 6955.80000, 533.4, 0.0 ! !END!
882 ! X = 391.63900, 6955.98000, 527.7, 0.0 ! !END!
883 ! X = 391.64100, 6955.54000, 546.3, 0.0 ! !END!
884 ! X = 391.64300, 6956.03100, 526.2, 0.0 ! !END!
885 ! X = 391.64500, 6955.72000, 537.2, 0.0 ! !END!
886 ! X = 391.64700, 6955.77000, 534.3, 0.0 ! !END!
887 ! X = 391.65400, 6955.60000, 540.8, 0.0 ! !END!
888 ! X = 391.65700, 6957.61700, 501.7, 0.0 ! !END!
889 ! X = 391.65700, 6955.80000, 532.6, 0.0 ! !END!
890 ! X = 391.65900, 6955.62000, 539.4, 0.0 ! !END!
891 ! X = 391.66300, 6956.38000, 517.8, 0.0 ! !END!
892 ! X = 391.66400, 6955.76000, 534.2, 0.0 ! !END!
893 ! X = 391.66700, 6955.64000, 538.1, 0.0 ! !END!
894 ! X = 391.67000, 6955.66000, 537.1, 0.0 ! !END!
895 ! X = 391.67100, 6956.02000, 525.2, 0.0 ! !END!
896 ! X = 391.67500, 6955.79000, 532.6, 0.0 ! !END!
897 ! X = 391.67500, 6956.06400, 524.2, 0.0 ! !END!
898 ! X = 391.67900, 6957.32100, 505.3, 0.0 ! !END!
899 ! X = 391.67900, 6955.68000, 536.8, 0.0 ! !END!
900 ! X = 391.68000, 6959.14000, 527.9, 0.0 ! !END!
901 ! X = 391.68300, 6956.18100, 521.6, 0.0 ! !END!
902 ! X = 391.68600, 6955.70000, 535.9, 0.0 ! !END!
903 ! X = 391.68900, 6956.01000, 525.1, 0.0 ! !END!
904 ! X = 391.69200, 6955.89000, 529.8, 0.0 ! !END!
905 ! X = 391.69700, 6955.71000, 535.7, 0.0 ! !END!
906 ! X = 391.70600, 6955.73000, 535.1, 0.0 ! !END!
907 ! X = 391.70700, 6956.00000, 525.1, 0.0 ! !END!
908 ! X = 391.71900, 6955.75000, 534.2, 0.0 ! !END!
909 ! X = 391.72200, 6955.99000, 525.1, 0.0 ! !END!
910 ! X = 391.72300, 6955.78000, 531.7, 0.0 ! !END!
911 ! X = 391.72600, 6955.80000, 530.9, 0.0 ! !END!
912 ! X = 391.73200, 6955.82000, 530.2, 0.0 ! !END!
913 ! X = 391.73300, 6955.84000, 530.0, 0.0 ! !END!
914 ! X = 391.73700, 6956.17000, 521.1, 0.0 ! !END!
915 ! X = 391.73700, 6956.17000, 521.1, 0.0 ! !END!
916 ! X = 391.74400, 6955.98000, 525.6, 0.0 ! !END!
917 ! X = 391.76000, 6955.97000, 526.1, 0.0 ! !END!
918 ! X = 391.76700, 6955.86000, 529.6, 0.0 ! !END!
919 ! X = 391.76700, 6956.03600, 524.0, 0.0 ! !END!
920 ! X = 391.78100, 6955.96000, 526.5, 0.0 ! !END!
921 ! X = 391.78600, 6955.88000, 529.1, 0.0 ! !END!
922 ! X = 391.80900, 6955.89000, 528.5, 0.0 ! !END!
923 ! X = 391.81200, 6957.42700, 509.1, 0.0 ! !END!
924 ! X = 391.83100, 6955.88000, 528.3, 0.0 ! !END!
925 ! X = 391.83400, 6958.51100, 494.9, 0.0 ! !END!
926 ! X = 391.83900, 6955.93000, 527.3, 0.0 ! !END!
927 ! X = 391.84300, 6957.78600, 499.5, 0.0 ! !END!
928 ! X = 391.84400, 6955.95000, 526.6, 0.0 ! !END!
929 ! X = 391.96500, 6958.19100, 494.4, 0.0 ! !END!
930 ! X = 392.01100, 6959.00000, 506.5, 0.0 ! !END!
931 ! X = 392.02400, 6957.70300, 508.2, 0.0 ! !END!
932 ! X = 392.03200, 6958.29000, 495.7, 0.0 ! !END!
933 ! X = 392.04000, 6956.30400, 520.4, 0.0 ! !END!
934 ! X = 392.05500, 6956.01000, 528.5, 0.0 ! !END!
935 ! X = 392.08800, 6956.29900, 521.4, 0.0 ! !END!
936 ! X = 392.09700, 6956.25100, 522.4, 0.0 ! !END!
937 ! X = 392.11000, 6955.78000, 531.1, 0.0 ! !END!
938 ! X = 392.11200, 6957.79200, 505.2, 0.0 ! !END!
939 ! X = 392.12500, 6959.22000, 508.3, 0.0 ! !END!
940 ! X = 392.14700, 6959.36000, 513.5, 0.0 ! !END!
941 ! X = 392.16000, 6956.24400, 522.6, 0.0 ! !END!
942 ! X = 392.16100, 6958.92100, 502.4, 0.0 ! !END!

943 ! X = 392.16200, 6958.24000, 497.9, 0.0 ! !END!
944 ! X = 392.16300, 6959.45000, 514.0, 0.0 ! !END!
945 ! X = 392.17100, 6956.29700, 522.4, 0.0 ! !END!
946 ! X = 392.17900, 6959.64000, 519.5, 0.0 ! !END!
947 ! X = 392.21900, 6958.23300, 499.7, 0.0 ! !END!
948 ! X = 392.24700, 6955.67900, 539.4, 0.0 ! !END!
949 ! X = 392.25800, 6955.77000, 536.3, 0.0 ! !END!
950 ! X = 392.27900, 6955.79600, 536.1, 0.0 ! !END!
951 ! X = 392.28500, 6955.33000, 550.6, 0.0 ! !END!
952 ! X = 392.30200, 6955.67200, 542.4, 0.0 ! !END!
953 ! X = 392.33100, 6956.64000, 527.8, 0.0 ! !END!
954 ! X = 392.35800, 6955.74000, 540.1, 0.0 ! !END!
955 ! X = 392.36000, 6955.55600, 546.6, 0.0 ! !END!
956 ! X = 392.36200, 6955.67100, 542.6, 0.0 ! !END!
957 ! X = 392.37700, 6955.24500, 555.4, 0.0 ! !END!
958 ! X = 392.38000, 6956.75600, 536.3, 0.0 ! !END!
959 ! X = 392.38500, 6956.24600, 525.8, 0.0 ! !END!
960 ! X = 392.39700, 6955.17000, 558.7, 0.0 ! !END!
961 ! X = 392.40000, 6956.68800, 534.5, 0.0 ! !END!
962 ! X = 392.40500, 6955.66100, 543.2, 0.0 ! !END!
963 ! X = 392.41000, 6955.32000, 557.1, 0.0 ! !END!
964 ! X = 392.41700, 6955.74500, 541.3, 0.0 ! !END!
965 ! X = 392.41900, 6955.41400, 555.1, 0.0 ! !END!
966 ! X = 392.43500, 6955.55500, 550.2, 0.0 ! !END!
967 ! X = 392.45200, 6956.06000, 531.7, 0.0 ! !END!
968 ! X = 392.45600, 6955.62100, 547.0, 0.0 ! !END!
969 ! X = 392.47900, 6955.31000, 562.9, 0.0 ! !END!
970 ! X = 392.48200, 6955.73300, 543.1, 0.0 ! !END!
971 ! X = 392.49200, 6957.38000, 542.8, 0.0 ! !END!
972 ! X = 392.50400, 6955.18000, 565.3, 0.0 ! !END!
973 ! X = 392.51400, 6955.24100, 564.8, 0.0 ! !END!
974 ! X = 392.52400, 6955.54700, 554.5, 0.0 ! !END!
975 ! X = 392.53600, 6956.59100, 543.2, 0.0 ! !END!
976 ! X = 392.55700, 6959.56000, 545.7, 0.0 ! !END!
977 ! X = 392.55700, 6959.56000, 545.7, 0.0 ! !END!
978 ! X = 392.55700, 6956.19600, 530.3, 0.0 ! !END!
979 ! X = 392.57800, 6955.26600, 566.9, 0.0 ! !END!
980 ! X = 392.58100, 6955.41000, 562.9, 0.0 ! !END!
981 ! X = 392.58600, 6955.68500, 546.7, 0.0 ! !END!
982 ! X = 392.62300, 6955.31900, 571.1, 0.0 ! !END!
983 ! X = 392.63300, 6956.01000, 538.8, 0.0 ! !END!
984 ! X = 392.64200, 6955.38800, 565.4, 0.0 ! !END!
985 ! X = 392.64300, 6955.24200, 577.0, 0.0 ! !END!
986 ! X = 392.65300, 6958.71800, 502.0, 0.0 ! !END!
987 ! X = 392.66100, 6958.73000, 502.0, 0.0 ! !END!
988 ! X = 392.67200, 6955.80500, 543.3, 0.0 ! !END!
989 ! X = 392.68900, 6956.50900, 555.2, 0.0 ! !END!
990 ! X = 392.71100, 6955.61900, 549.7, 0.0 ! !END!
991 ! X = 392.71200, 6958.94000, 504.0, 0.0 ! !END!
992 ! X = 392.71200, 6958.94000, 504.0, 0.0 ! !END!
993 ! X = 392.73600, 6958.70600, 502.6, 0.0 ! !END!
994 ! X = 392.73900, 6956.05400, 541.7, 0.0 ! !END!
995 ! X = 392.75500, 6955.45600, 562.7, 0.0 ! !END!
996 ! X = 392.75500, 6955.49200, 561.0, 0.0 ! !END!
997 ! X = 392.75600, 6955.34500, 572.5, 0.0 ! !END!
998 ! X = 392.81000, 6955.99900, 546.5, 0.0 ! !END!
999 ! X = 392.82200, 6955.66400, 551.7, 0.0 ! !END!
1000 ! X = 392.88700, 6957.88000, 541.4, 0.0 ! !END!
1001 ! X = 392.89900, 6956.30000, 564.2, 0.0 ! !END!
1002 ! X = 392.89900, 6956.30000, 564.2, 0.0 ! !END!
1003 ! X = 392.92400, 6956.04200, 555.0, 0.0 ! !END!
1004 ! X = 393.02600, 6956.02000, 561.7, 0.0 ! !END!
1005 ! X = 393.06500, 6956.00500, 564.2, 0.0 ! !END!
1006 ! X = 393.11300, 6955.68900, 566.5, 0.0 ! !END!
1007 ! X = 393.20700, 6958.89100, 515.6, 0.0 ! !END!
1008 ! X = 393.21300, 6956.29100, 587.2, 0.0 ! !END!
1009 ! X = 393.23100, 6955.99400, 571.2, 0.0 ! !END!
1010 ! X = 393.29100, 6955.93200, 567.8, 0.0 ! !END!
1011 ! X = 393.33600, 6956.23100, 589.5, 0.0 ! !END!
1012 ! X = 393.37200, 6955.99600, 576.0, 0.0 ! !END!
1013 ! X = 393.40100, 6955.89000, 570.2, 0.0 ! !END!

1014 ! X =	393.49300,	6955.40800,	601.1,	0.0 !	!END!
1015 ! X =	393.51900,	6956.12400,	582.8,	0.0 !	!END!
1016 ! X =	393.53500,	6955.51000,	595.9,	0.0 !	!END!
1017 ! X =	393.53900,	6955.35000,	607.7,	0.0 !	!END!
1018 ! X =	393.58300,	6955.84800,	574.2,	0.0 !	!END!
1019 ! X =	393.59100,	6955.60800,	583.5,	0.0 !	!END!
1020 ! X =	393.63000,	6955.55400,	588.4,	0.0 !	!END!
1021 ! X =	393.64600,	6955.68000,	581.2,	0.0 !	!END!
1022 ! X =	393.65300,	6955.87400,	577.3,	0.0 !	!END!
1023 ! X =	393.65600,	6955.47400,	592.0,	0.0 !	!END!
1024 ! X =	393.66500,	6955.96200,	579.7,	0.0 !	!END!
1025 ! X =	393.66700,	6955.82300,	577.2,	0.0 !	!END!
1026 ! X =	393.67100,	6955.95800,	579.6,	0.0 !	!END!
1027 ! X =	393.67900,	6955.77700,	577.4,	0.0 !	!END!
1028 ! X =	393.71700,	6957.66900,	529.5,	0.0 !	!END!
1029 ! X =	393.76100,	6955.93200,	577.3,	0.0 !	!END!
1030 ! X =	393.80600,	6955.92500,	576.6,	0.0 !	!END!
1031 ! X =	393.80800,	6956.16900,	582.5,	0.0 !	!END!
1032 ! X =	393.81500,	6957.66000,	524.7,	0.0 !	!END!
1033 ! X =	393.81900,	6955.66600,	585.2,	0.0 !	!END!
1034 ! X =	393.83100,	6955.73300,	583.4,	0.0 !	!END!
1035 ! X =	393.85200,	6955.47600,	600.5,	0.0 !	!END!
1036 ! X =	393.86100,	6955.58800,	592.9,	0.0 !	!END!
1037 ! X =	393.88900,	6956.01000,	572.9,	0.0 !	!END!
1038 ! X =	393.89800,	6955.38300,	607.2,	0.0 !	!END!
1039 ! X =	394.07600,	6955.67800,	596.2,	0.0 !	!END!
1040 ! X =	394.08900,	6955.73100,	589.2,	0.0 !	!END!
1041 ! X =	394.36100,	6957.58600,	530.5,	0.0 !	!END!
1042 ! X =	394.42500,	6956.99400,	529.2,	0.0 !	!END!
1043 ! X =	394.49900,	6957.64500,	539.4,	0.0 !	!END!
1044 ! X =	394.50600,	6955.95000,	561.1,	0.0 !	!END!
1045 ! X =	394.68100,	6955.21100,	617.7,	0.0 !	!END!
1046 ! X =	394.69300,	6955.28700,	613.9,	0.0 !	!END!
1047 ! X =	394.70000,	6954.91800,	628.0,	0.0 !	!END!
1048 ! X =	394.70000,	6955.14300,	623.6,	0.0 !	!END!
1049 ! X =	394.72400,	6955.89200,	557.1,	0.0 !	!END!
1050 ! X =	394.74700,	6955.16800,	618.0,	0.0 !	!END!
1051 ! X =	394.76200,	6954.91800,	625.8,	0.0 !	!END!
1052 ! X =	394.77600,	6956.05600,	550.2,	0.0 !	!END!
1053 ! X =	394.79900,	6955.12600,	619.4,	0.0 !	!END!
1054 ! X =	394.84800,	6954.93800,	620.5,	0.0 !	!END!
1055 ! X =	394.85800,	6955.01400,	618.9,	0.0 !	!END!
1056 ! X =	394.86400,	6955.06900,	617.4,	0.0 !	!END!
1057 ! X =	394.87600,	6955.24500,	604.8,	0.0 !	!END!
1058 ! X =	394.88400,	6956.89400,	541.8,	0.0 !	!END!
1059 ! X =	394.89500,	6954.91800,	619.0,	0.0 !	!END!
1060 ! X =	394.90700,	6957.35000,	560.9,	0.0 !	!END!
1061 ! X =	394.90800,	6955.15100,	612.6,	0.0 !	!END!
1062 ! X =	394.91900,	6956.88200,	542.1,	0.0 !	!END!
1063 ! X =	394.92000,	6955.06800,	616.9,	0.0 !	!END!
1064 ! X =	394.94100,	6955.00600,	616.7,	0.0 !	!END!
1065 ! X =	394.96000,	6954.91700,	616.6,	0.0 !	!END!
1066 ! X =	394.96100,	6956.72500,	541.9,	0.0 !	!END!
1067 ! X =	394.98500,	6955.06800,	613.9,	0.0 !	!END!
1068 ! X =	394.98800,	6955.21100,	603.7,	0.0 !	!END!
1069 ! X =	394.99900,	6954.91300,	612.8,	0.0 !	!END!
1070 ! X =	395.04600,	6955.06900,	609.5,	0.0 !	!END!
1071 ! X =	395.06200,	6954.91700,	607.4,	0.0 !	!END!
1072 ! X =	395.07100,	6955.03300,	610.0,	0.0 !	!END!
1073 ! X =	395.08300,	6954.96200,	608.5,	0.0 !	!END!
1074 ! X =	395.41600,	6957.66700,	640.4,	0.0 !	!END!
1075 ! X =	395.43100,	6955.41700,	569.3,	0.0 !	!END!
1076 ! X =	395.66900,	6957.28200,	659.9,	0.0 !	!END!
1077 ! X =	395.72300,	6957.46300,	656.3,	0.0 !	!END!
1078 ! X =	395.73200,	6957.07400,	654.3,	0.0 !	!END!
1079 ! X =	395.75200,	6957.24700,	662.0,	0.0 !	!END!
1080 ! X =	395.75400,	6954.96600,	562.4,	0.0 !	!END!
1081 ! X =	395.78500,	6957.43900,	655.2,	0.0 !	!END!
1082 ! X =	396.21900,	6955.95000,	628.8,	0.0 !	!END!
1083 ! X =	396.23600,	6955.95000,	632.8,	0.0 !	!END!
1084 ! X =	396.24900,	6955.99000,	637.0,	0.0 !	!END!

1085 ! X =	396.25700,	6955.94000,	633.8,	0.0 !	!END!
1086 ! X =	396.25800,	6956.12000,	639.8,	0.0 !	!END!
1087 ! X =	396.26500,	6956.09000,	641.4,	0.0 !	!END!
1088 ! X =	396.27300,	6956.07000,	643.8,	0.0 !	!END!
1089 ! X =	396.27400,	6955.98000,	639.7,	0.0 !	!END!
1090 ! X =	396.27400,	6956.06000,	645.6,	0.0 !	!END!
1091 ! X =	396.27600,	6956.01000,	642.2,	0.0 !	!END!
1092 ! X =	396.27600,	6955.94000,	634.9,	0.0 !	!END!
1093 ! X =	396.27700,	6956.02000,	643.3,	0.0 !	!END!
1094 ! X =	396.28000,	6956.05000,	646.2,	0.0 !	!END!
1095 ! X =	396.29600,	6955.94000,	635.8,	0.0 !	!END!
1096 ! X =	396.30100,	6956.14000,	641.9,	0.0 !	!END!
1097 ! X =	396.30900,	6956.15000,	641.6,	0.0 !	!END!
1098 ! X =	396.31000,	6956.10000,	645.5,	0.0 !	!END!
1099 ! X =	396.31800,	6955.93000,	635.5,	0.0 !	!END!
1100 ! X =	396.31800,	6956.08000,	647.2,	0.0 !	!END!
1101 ! X =	396.32100,	6955.97000,	643.1,	0.0 !	!END!
1102 ! X =	396.32200,	6956.00000,	645.8,	0.0 !	!END!
1103 ! X =	396.32200,	6956.00000,	645.8,	0.0 !	!END!
1104 ! X =	396.32700,	6956.06000,	647.6,	0.0 !	!END!
1105 ! X =	396.33000,	6956.03000,	647.3,	0.0 !	!END!
1106 ! X =	396.33100,	6956.15000,	646.3,	0.0 !	!END!
1107 ! X =	396.33700,	6956.11000,	647.5,	0.0 !	!END!
1108 ! X =	396.33800,	6956.20000,	643.0,	0.0 !	!END!
1109 ! X =	396.34200,	6955.93000,	638.4,	0.0 !	!END!
1110 ! X =	396.34400,	6956.17300,	644.8,	0.0 !	!END!
1111 ! X =	396.34500,	6956.09000,	647.8,	0.0 !	!END!
1112 ! X =	396.34700,	6955.97000,	643.6,	0.0 !	!END!
1113 ! X =	396.35100,	6956.07000,	647.2,	0.0 !	!END!
1114 ! X =	396.35400,	6955.99000,	645.4,	0.0 !	!END!
1115 ! X =	396.35600,	6956.02000,	647.3,	0.0 !	!END!
1116 ! X =	396.36000,	6956.05000,	647.2,	0.0 !	!END!
1117 ! X =	396.38300,	6956.14200,	649.2,	0.0 !	!END!
1118 ! X =	396.38500,	6956.19200,	647.8,	0.0 !	!END!
1119 ! X =	396.39200,	6956.12500,	650.0,	0.0 !	!END!
1120 ! X =	396.39800,	6956.10700,	650.6,	0.0 !	!END!
1121 ! X =	396.40000,	6955.95400,	644.4,	0.0 !	!END!
1122 ! X =	396.40200,	6955.99000,	647.6,	0.0 !	!END!
1123 ! X =	396.40300,	6956.15000,	650.6,	0.0 !	!END!
1124 ! X =	396.40500,	6956.06000,	650.7,	0.0 !	!END!
1125 ! X =	396.40600,	6956.08800,	651.1,	0.0 !	!END!
1126 ! X =	396.40600,	6956.04000,	649.3,	0.0 !	!END!
1127 ! X =	396.41200,	6956.13000,	651.8,	0.0 !	!END!
1128 ! X =	396.41800,	6956.18800,	651.6,	0.0 !	!END!
1129 ! X =	396.42600,	6955.99000,	650.4,	0.0 !	!END!
1130 ! X =	396.42800,	6956.11600,	653.8,	0.0 !	!END!
1131 ! X =	396.43400,	6956.03000,	653.3,	0.0 !	!END!
1132 ! X =	396.43600,	6956.09900,	654.5,	0.0 !	!END!
1133 ! X =	396.43600,	6956.05000,	654.1,	0.0 !	!END!
1134 ! X =	396.44300,	6954.52000,	593.7,	0.0 !	!END!
1135 ! X =	396.44400,	6956.06600,	655.6,	0.0 !	!END!
1136 ! X =	396.44500,	6956.08300,	655.5,	0.0 !	!END!
1137 ! X =	396.44600,	6955.99000,	652.0,	0.0 !	!END!
1138 ! X =	396.46400,	6956.18600,	657.3,	0.0 !	!END!
1139 ! X =	396.46500,	6954.95000,	610.0,	0.0 !	!END!
1140 ! X =	396.47200,	6955.94800,	647.8,	0.0 !	!END!
1141 ! X =	396.47200,	6954.97000,	611.6,	0.0 !	!END!
1142 ! X =	396.47300,	6956.12700,	655.9,	0.0 !	!END!
1143 ! X =	396.47300,	6955.05000,	615.6,	0.0 !	!END!
1144 ! X =	396.47500,	6956.14900,	656.1,	0.0 !	!END!
1145 ! X =	396.47500,	6954.99000,	612.9,	0.0 !	!END!
1146 ! X =	396.47600,	6955.03000,	614.6,	0.0 !	!END!
1147 ! X =	396.47700,	6955.01000,	613.7,	0.0 !	!END!
1148 ! X =	396.47700,	6955.91300,	645.5,	0.0 !	!END!
1149 ! X =	396.48000,	6954.94000,	610.4,	0.0 !	!END!
1150 ! X =	396.48200,	6955.98000,	651.8,	0.0 !	!END!
1151 ! X =	396.48200,	6956.07000,	658.5,	0.0 !	!END!
1152 ! X =	396.48500,	6956.00000,	654.5,	0.0 !	!END!
1153 ! X =	396.48600,	6956.09500,	657.7,	0.0 !	!END!
1154 ! X =	396.48800,	6956.03900,	658.8,	0.0 !	!END!
1155 ! X =	396.48800,	6956.18000,	658.6,	0.0 !	!END!

1156 ! X = 396.48800, 6955.09000, 615.2, 0.0 ! !END!
1157 ! X = 396.48900, 6954.93000, 610.4, 0.0 ! !END!
1158 ! X = 396.49000, 6955.10000, 614.9, 0.0 ! !END!
1159 ! X = 396.49000, 6955.12000, 614.0, 0.0 ! !END!
1160 ! X = 396.49200, 6955.14000, 613.5, 0.0 ! !END!
1161 ! X = 396.49300, 6955.04000, 616.4, 0.0 ! !END!
1162 ! X = 396.49700, 6955.15000, 613.6, 0.0 ! !END!
1163 ! X = 396.49800, 6956.11800, 657.1, 0.0 ! !END!
1164 ! X = 396.49900, 6954.92000, 610.4, 0.0 ! !END!
1165 ! X = 396.49900, 6955.17000, 614.0, 0.0 ! !END!
1166 ! X = 396.50300, 6955.19000, 614.8, 0.0 ! !END!
1167 ! X = 396.50300, 6955.20000, 615.2, 0.0 ! !END!
1168 ! X = 396.50600, 6955.22000, 616.3, 0.0 ! !END!
1169 ! X = 396.50800, 6954.91000, 610.4, 0.0 ! !END!
1170 ! X = 396.50800, 6954.97000, 613.2, 0.0 ! !END!
1171 ! X = 396.51000, 6955.04000, 616.8, 0.0 ! !END!
1172 ! X = 396.51300, 6954.41000, 595.6, 0.0 ! !END!
1173 ! X = 396.51400, 6954.99000, 614.6, 0.0 ! !END!
1174 ! X = 396.51600, 6956.15800, 658.3, 0.0 ! !END!
1175 ! X = 396.51600, 6955.00000, 615.3, 0.0 ! !END!
1176 ! X = 396.51700, 6954.89000, 610.3, 0.0 ! !END!
1177 ! X = 396.51800, 6954.95000, 611.8, 0.0 ! !END!
1178 ! X = 396.51800, 6955.12000, 615.1, 0.0 ! !END!
1179 ! X = 396.52100, 6955.13000, 617.2, 0.0 ! !END!
1180 ! X = 396.52100, 6955.13000, 617.2, 0.0 ! !END!
1181 ! X = 396.52200, 6955.02000, 616.5, 0.0 ! !END!
1182 ! X = 396.52300, 6955.15000, 617.4, 0.0 ! !END!
1183 ! X = 396.52500, 6956.23000, 663.8, 0.0 ! !END!
1184 ! X = 396.52500, 6955.17000, 616.9, 0.0 ! !END!
1185 ! X = 396.52600, 6954.88000, 610.3, 0.0 ! !END!
1186 ! X = 396.52700, 6955.08000, 616.7, 0.0 ! !END!
1187 ! X = 396.53000, 6955.10000, 617.1, 0.0 ! !END!
1188 ! X = 396.53100, 6954.94000, 613.7, 0.0 ! !END!
1189 ! X = 396.53100, 6955.04000, 616.8, 0.0 ! !END!
1190 ! X = 396.53200, 6955.11000, 617.3, 0.0 ! !END!
1191 ! X = 396.53200, 6955.11000, 617.3, 0.0 ! !END!
1192 ! X = 396.53500, 6954.87000, 610.3, 0.0 ! !END!
1193 ! X = 396.53500, 6955.13000, 617.6, 0.0 ! !END!
1194 ! X = 396.53500, 6955.13000, 617.6, 0.0 ! !END!
1195 ! X = 396.53800, 6955.15000, 617.8, 0.0 ! !END!
1196 ! X = 396.54000, 6954.93000, 613.4, 0.0 ! !END!
1197 ! X = 396.54000, 6955.16000, 617.4, 0.0 ! !END!
1198 ! X = 396.54100, 6955.18000, 617.3, 0.0 ! !END!
1199 ! X = 396.54200, 6955.11000, 617.5, 0.0 ! !END!
1200 ! X = 396.54200, 6955.11000, 617.5, 0.0 ! !END!
1201 ! X = 396.54400, 6954.86000, 610.3, 0.0 ! !END!
1202 ! X = 396.54400, 6955.13000, 617.8, 0.0 ! !END!
1203 ! X = 396.54600, 6955.20000, 617.2, 0.0 ! !END!
1204 ! X = 396.54600, 6955.21000, 617.1, 0.0 ! !END!
1205 ! X = 396.54900, 6954.92000, 613.1, 0.0 ! !END!
1206 ! X = 396.55300, 6954.85000, 610.3, 0.0 ! !END!
1207 ! X = 396.55800, 6954.91000, 612.9, 0.0 ! !END!
1208 ! X = 396.56100, 6954.83000, 610.7, 0.0 ! !END!
1209 ! X = 396.56700, 6954.89000, 612.5, 0.0 ! !END!
1210 ! X = 396.56900, 6954.98000, 616.4, 0.0 ! !END!
1211 ! X = 396.57100, 6954.82000, 611.0, 0.0 ! !END!
1212 ! X = 396.57100, 6954.84000, 611.1, 0.0 ! !END!
1213 ! X = 396.57500, 6955.00000, 617.8, 0.0 ! !END!
1214 ! X = 396.57600, 6954.88000, 612.6, 0.0 ! !END!
1215 ! X = 396.57600, 6955.04000, 617.9, 0.0 ! !END!
1216 ! X = 396.57700, 6955.02000, 617.9, 0.0 ! !END!
1217 ! X = 396.57900, 6954.81000, 611.2, 0.0 ! !END!
1218 ! X = 396.58100, 6954.25000, 598.9, 0.0 ! !END!
1219 ! X = 396.58200, 6955.08000, 619.0, 0.0 ! !END!
1220 ! X = 396.58500, 6954.87000, 612.9, 0.0 ! !END!
1221 ! X = 396.58600, 6955.09000, 619.4, 0.0 ! !END!
1222 ! X = 396.58900, 6954.78000, 610.1, 0.0 ! !END!
1223 ! X = 396.59100, 6955.11000, 620.1, 0.0 ! !END!
1224 ! X = 396.59400, 6954.86000, 613.4, 0.0 ! !END!
1225 ! X = 396.59400, 6954.98000, 618.3, 0.0 ! !END!
1226 ! X = 396.59900, 6955.14000, 620.4, 0.0 ! !END!

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1227 ! X =   396.60000,   6954.94000,   616.5,      0.0 !  !END!
1228 ! X =   396.60000,   6955.03000,   619.2,      0.0 !  !END!
1229 ! X =   396.60000,   6955.13000,   620.9,      0.0 !  !END!
1230 ! X =   396.60000,   6955.21000,   620.9,      0.0 !  !END!
1231 ! X =   396.60000,   6955.13000,   620.9,      0.0 !  !END!
1232 ! X =   396.60000,   6955.13000,   620.9,      0.0 !  !END!
1233 ! X =   396.60300,   6954.85000,   612.9,      0.0 !  !END!
1234 ! X =   396.60500,   6954.79000,   612.0,      0.0 !  !END!
1235 ! X =   396.60700,   6955.18000,   621.7,      0.0 !  !END!
1236 ! X =   396.60700,   6955.18000,   621.7,      0.0 !  !END!
1237 ! X =   396.60800,   6955.08000,   620.8,      0.0 !  !END!
1238 ! X =   396.60800,   6955.17000,   621.8,      0.0 !  !END!
1239 ! X =   396.60800,   6955.17000,   621.8,      0.0 !  !END!
1240 ! X =   396.61100,   6954.98000,   619.2,      0.0 !  !END!
1241 ! X =   396.61500,   6954.91000,   616.4,      0.0 !  !END!
1242 ! X =   396.61600,   6954.83000,   613.7,      0.0 !  !END!
1243 ! X =   396.61600,   6955.02000,   620.2,      0.0 !  !END!
1244 ! X =   396.62000,   6956.21400,   654.5,      0.0 !  !END!
1245 ! X =   396.62100,   6954.80000,   613.9,      0.0 !  !END!
1246 ! X =   396.62400,   6954.57000,   605.4,      0.0 !  !END!
1247 ! X =   396.62400,   6955.08000,   622.7,      0.0 !  !END!
1248 ! X =   396.62500,   6955.20000,   624.1,      0.0 !  !END!
1249 ! X =   396.62600,   6954.93000,   618.2,      0.0 !  !END!
1250 ! X =   396.62600,   6954.98000,   620.7,      0.0 !  !END!
1251 ! X =   396.62800,   6955.11000,   623.1,      0.0 !  !END!
1252 ! X =   396.62800,   6955.11000,   623.1,      0.0 !  !END!
1253 ! X =   396.63100,   6954.90000,   617.8,      0.0 !  !END!
1254 ! X =   396.63100,   6955.02000,   622.2,      0.0 !  !END!
1255 ! X =   396.63200,   6954.41000,   603.1,      0.0 !  !END!
1256 ! X =   396.63500,   6954.82000,   615.7,      0.0 !  !END!
1257 ! X =   396.63900,   6955.08000,   623.9,      0.0 !  !END!
1258 ! X =   396.64100,   6954.98000,   621.6,      0.0 !  !END!
1259 ! X =   396.64200,   6955.17000,   625.0,      0.0 !  !END!
1260 ! X =   396.64200,   6955.17000,   625.0,      0.0 !  !END!
1261 ! X =   396.64200,   6955.17000,   625.0,      0.0 !  !END!
1262 ! X =   396.64200,   6955.17000,   625.0,      0.0 !  !END!
1263 ! X =   396.64300,   6954.89000,   618.4,      0.0 !  !END!
1264 ! X =   396.64300,   6955.16000,   624.9,      0.0 !  !END!
1265 ! X =   396.64300,   6955.16000,   624.9,      0.0 !  !END!
1266 ! X =   396.64500,   6954.93000,   620.1,      0.0 !  !END!
1267 ! X =   396.64600,   6955.02000,   623.4,      0.0 !  !END!
1268 ! X =   396.65400,   6955.08000,   625.0,      0.0 !  !END!
1269 ! X =   396.65600,   6954.98000,   622.7,      0.0 !  !END!
1270 ! X =   396.65700,   6954.88000,   619.2,      0.0 !  !END!
1271 ! X =   396.66100,   6954.92000,   620.5,      0.0 !  !END!
1272 ! X =   396.66100,   6955.02000,   624.6,      0.0 !  !END!
1273 ! X =   396.66100,   6955.19000,   626.6,      0.0 !  !END!
1274 ! X =   396.66300,   6955.19700,   626.8,      0.0 !  !END!
1275 ! X =   396.66500,   6954.87000,   619.6,      0.0 !  !END!
1276 ! X =   396.66700,   6955.12000,   625.9,      0.0 !  !END!
1277 ! X =   396.66700,   6955.13000,   625.9,      0.0 !  !END!
1278 ! X =   396.66700,   6955.12000,   625.9,      0.0 !  !END!
1279 ! X =   396.66700,   6955.12000,   625.9,      0.0 !  !END!
1280 ! X =   396.66900,   6955.08000,   625.9,      0.0 !  !END!
1281 ! X =   396.67100,   6954.84000,   619.2,      0.0 !  !END!
1282 ! X =   396.67100,   6954.98000,   623.5,      0.0 !  !END!
1283 ! X =   396.67300,   6954.68000,   611.1,      0.0 !  !END!
1284 ! X =   396.67600,   6954.92000,   621.0,      0.0 !  !END!
1285 ! X =   396.67600,   6955.01000,   625.1,      0.0 !  !END!
1286 ! X =   396.67900,   6954.09000,   612.8,      0.0 !  !END!
1287 ! X =   396.68100,   6955.11000,   626.5,      0.0 !  !END!
1288 ! X =   396.68200,   6954.50000,   606.6,      0.0 !  !END!
1289 ! X =   396.68400,   6955.07000,   627.2,      0.0 !  !END!
1290 ! X =   396.68600,   6954.97000,   623.6,      0.0 !  !END!
1291 ! X =   396.68800,   6954.86000,   620.7,      0.0 !  !END!
1292 ! X =   396.68800,   6955.11000,   626.7,      0.0 !  !END!
1293 ! X =   396.68800,   6953.99000,   614.9,      0.0 !  !END!
1294 ! X =   396.69100,   6955.01000,   626.0,      0.0 !  !END!
1295 ! X =   396.69100,   6955.19000,   628.0,      0.0 !  !END!
1296 ! X =   396.69100,   6955.19000,   628.0,      0.0 !  !END!
1297 ! X =   396.69200,   6955.11000,   626.8,      0.0 !  !END!
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1298 ! X =	396.69200,	6954.91000,	621.1,	0.0 !	!END!
1299 ! X =	396.69700,	6955.11000,	626.9,	0.0 !	!END!
1300 ! X =	396.69800,	6954.81000,	619.4,	0.0 !	!END!
1301 ! X =	396.69900,	6955.07000,	627.4,	0.0 !	!END!
1302 ! X =	396.70100,	6954.97000,	624.1,	0.0 !	!END!
1303 ! X =	396.70100,	6956.34500,	659.4,	0.0 !	!END!
1304 ! X =	396.70200,	6955.11000,	627.0,	0.0 !	!END!
1305 ! X =	396.70400,	6954.87000,	620.9,	0.0 !	!END!
1306 ! X =	396.70600,	6955.01000,	627.0,	0.0 !	!END!
1307 ! X =	396.70700,	6955.11000,	627.1,	0.0 !	!END!
1308 ! X =	396.70800,	6954.80000,	619.1,	0.0 !	!END!
1309 ! X =	396.70800,	6954.91000,	621.4,	0.0 !	!END!
1310 ! X =	396.71400,	6955.07000,	627.5,	0.0 !	!END!
1311 ! X =	396.71500,	6954.67000,	611.6,	0.0 !	!END!
1312 ! X =	396.71600,	6954.97000,	624.4,	0.0 !	!END!
1313 ! X =	396.71800,	6954.17000,	610.4,	0.0 !	!END!
1314 ! X =	396.71900,	6955.11000,	627.3,	0.0 !	!END!
1315 ! X =	396.71900,	6955.11000,	627.3,	0.0 !	!END!
1316 ! X =	396.71900,	6955.11000,	627.3,	0.0 !	!END!
1317 ! X =	396.72000,	6954.82000,	620.7,	0.0 !	!END!
1318 ! X =	396.72000,	6955.18000,	629.4,	0.0 !	!END!
1319 ! X =	396.72000,	6955.18000,	629.4,	0.0 !	!END!
1320 ! X =	396.72000,	6955.18000,	629.4,	0.0 !	!END!
1321 ! X =	396.72000,	6955.18000,	629.4,	0.0 !	!END!
1322 ! X =	396.72100,	6955.01000,	627.2,	0.0 !	!END!
1323 ! X =	396.72200,	6954.78000,	618.8,	0.0 !	!END!
1324 ! X =	396.72400,	6954.91000,	622.3,	0.0 !	!END!
1325 ! X =	396.72500,	6954.21000,	609.8,	0.0 !	!END!
1326 ! X =	396.72600,	6954.87000,	621.0,	0.0 !	!END!
1327 ! X =	396.72600,	6955.12000,	628.3,	0.0 !	!END!
1328 ! X =	396.72900,	6955.07000,	627.6,	0.0 !	!END!
1329 ! X =	396.73300,	6955.14000,	628.8,	0.0 !	!END!
1330 ! X =	396.73300,	6955.14000,	628.8,	0.0 !	!END!
1331 ! X =	396.73400,	6954.77000,	618.3,	0.0 !	!END!
1332 ! X =	396.73400,	6954.97000,	626.0,	0.0 !	!END!
1333 ! X =	396.73400,	6955.15000,	629.1,	0.0 !	!END!
1334 ! X =	396.73400,	6955.15000,	629.1,	0.0 !	!END!
1335 ! X =	396.73500,	6956.03000,	631.5,	0.0 !	!END!
1336 ! X =	396.73600,	6955.16000,	629.3,	0.0 !	!END!
1337 ! X =	396.73600,	6955.16000,	629.3,	0.0 !	!END!
1338 ! X =	396.73700,	6954.81000,	620.3,	0.0 !	!END!
1339 ! X =	396.73900,	6955.00000,	627.0,	0.0 !	!END!
1340 ! X =	396.74000,	6954.91000,	622.6,	0.0 !	!END!
1341 ! X =	396.74300,	6954.87000,	621.0,	0.0 !	!END!
1342 ! X =	396.74600,	6954.76000,	617.8,	0.0 !	!END!
1343 ! X =	396.74800,	6955.06000,	627.6,	0.0 !	!END!
1344 ! X =	396.74900,	6954.97000,	626.2,	0.0 !	!END!
1345 ! X =	396.75000,	6953.94000,	621.0,	0.0 !	!END!
1346 ! X =	396.75200,	6954.29000,	610.0,	0.0 !	!END!
1347 ! X =	396.75300,	6954.80000,	619.9,	0.0 !	!END!
1348 ! X =	396.75400,	6955.00000,	627.1,	0.0 !	!END!
1349 ! X =	396.75400,	6956.07100,	630.1,	0.0 !	!END!
1350 ! X =	396.75600,	6954.75000,	616.8,	0.0 !	!END!
1351 ! X =	396.75600,	6954.91000,	623.1,	0.0 !	!END!
1352 ! X =	396.75600,	6953.97000,	619.8,	0.0 !	!END!
1353 ! X =	396.75800,	6953.99000,	618.7,	0.0 !	!END!
1354 ! X =	396.75900,	6954.86000,	621.1,	0.0 !	!END!
1355 ! X =	396.76100,	6955.10000,	628.5,	0.0 !	!END!
1356 ! X =	396.76200,	6954.01000,	618.2,	0.0 !	!END!
1357 ! X =	396.76400,	6954.04000,	617.0,	0.0 !	!END!
1358 ! X =	396.76400,	6954.96000,	626.1,	0.0 !	!END!
1359 ! X =	396.76400,	6955.06000,	627.7,	0.0 !	!END!
1360 ! X =	396.76500,	6955.11000,	628.8,	0.0 !	!END!
1361 ! X =	396.76700,	6955.15000,	629.6,	0.0 !	!END!
1362 ! X =	396.76700,	6955.13000,	629.3,	0.0 !	!END!
1363 ! X =	396.76700,	6954.74000,	616.4,	0.0 !	!END!
1364 ! X =	396.76800,	6954.80000,	620.0,	0.0 !	!END!
1365 ! X =	396.76900,	6955.00000,	627.2,	0.0 !	!END!
1366 ! X =	396.77000,	6956.66100,	701.1,	0.0 !	!END!
1367 ! X =	396.77000,	6955.17000,	629.9,	0.0 !	!END!
1368 ! X =	396.77000,	6955.17000,	629.9,	0.0 !	!END!

1369 ! X =	396.77100,	6954.90000,	623.3,	0.0 !	!END!
1370 ! X =	396.77200,	6955.19000,	630.1,	0.0 !	!END!
1371 ! X =	396.77200,	6955.18000,	630.1,	0.0 !	!END!
1372 ! X =	396.77300,	6954.73000,	616.0,	0.0 !	!END!
1373 ! X =	396.77500,	6954.86000,	622.4,	0.0 !	!END!
1374 ! X =	396.77800,	6954.22000,	613.1,	0.0 !	!END!
1375 ! X =	396.77900,	6954.71000,	615.4,	0.0 !	!END!
1376 ! X =	396.77900,	6954.96000,	626.4,	0.0 !	!END!
1377 ! X =	396.78000,	6955.06000,	628.7,	0.0 !	!END!
1378 ! X =	396.78200,	6954.79000,	620.8,	0.0 !	!END!
1379 ! X =	396.78400,	6953.94000,	623.0,	0.0 !	!END!
1380 ! X =	396.78400,	6955.00000,	628.2,	0.0 !	!END!
1381 ! X =	396.78700,	6954.90000,	624.1,	0.0 !	!END!
1382 ! X =	396.78800,	6954.12000,	618.4,	0.0 !	!END!
1383 ! X =	396.78800,	6954.69000,	614.9,	0.0 !	!END!
1384 ! X =	396.78900,	6953.92000,	624.4,	0.0 !	!END!
1385 ! X =	396.79100,	6954.86000,	623.2,	0.0 !	!END!
1386 ! X =	396.79400,	6954.96000,	626.9,	0.0 !	!END!
1387 ! X =	396.79600,	6954.08000,	619.1,	0.0 !	!END!
1388 ! X =	396.79600,	6953.90000,	625.0,	0.0 !	!END!
1389 ! X =	396.79600,	6955.06000,	629.4,	0.0 !	!END!
1390 ! X =	396.79700,	6954.79000,	621.2,	0.0 !	!END!
1391 ! X =	396.79900,	6955.00000,	628.7,	0.0 !	!END!
1392 ! X =	396.80100,	6953.96000,	623.4,	0.0 !	!END!
1393 ! X =	396.80300,	6955.12000,	630.5,	0.0 !	!END!
1394 ! X =	396.80300,	6953.98000,	623.3,	0.0 !	!END!
1395 ! X =	396.80300,	6954.90000,	625.0,	0.0 !	!END!
1396 ! X =	396.80600,	6954.67000,	615.2,	0.0 !	!END!
1397 ! X =	396.80700,	6954.16000,	617.5,	0.0 !	!END!
1398 ! X =	396.80700,	6954.86000,	624.3,	0.0 !	!END!
1399 ! X =	396.80800,	6954.00000,	622.9,	0.0 !	!END!
1400 ! X =	396.80800,	6954.00000,	622.9,	0.0 !	!END!
1401 ! X =	396.80900,	6954.36000,	612.7,	0.0 !	!END!
1402 ! X =	396.80900,	6954.96000,	627.5,	0.0 !	!END!
1403 ! X =	396.81000,	6953.97000,	624.3,	0.0 !	!END!
1404 ! X =	396.81000,	6954.02000,	622.5,	0.0 !	!END!
1405 ! X =	396.81200,	6955.09000,	630.5,	0.0 !	!END!
1406 ! X =	396.81200,	6954.70000,	616.5,	0.0 !	!END!
1407 ! X =	396.81200,	6954.72000,	617.3,	0.0 !	!END!
1408 ! X =	396.81200,	6954.73000,	617.8,	0.0 !	!END!
1409 ! X =	396.81200,	6955.06000,	630.3,	0.0 !	!END!
1410 ! X =	396.81300,	6954.04000,	622.4,	0.0 !	!END!
1411 ! X =	396.81300,	6954.75000,	618.6,	0.0 !	!END!
1412 ! X =	396.81400,	6955.15000,	630.9,	0.0 !	!END!
1413 ! X =	396.81400,	6954.99000,	629.1,	0.0 !	!END!
1414 ! X =	396.81500,	6955.16000,	631.7,	0.0 !	!END!
1415 ! X =	396.81500,	6954.80000,	622.2,	0.0 !	!END!
1416 ! X =	396.81800,	6954.76000,	620.6,	0.0 !	!END!
1417 ! X =	396.81900,	6955.18000,	631.9,	0.0 !	!END!
1418 ! X =	396.81900,	6954.90000,	625.8,	0.0 !	!END!
1419 ! X =	396.82000,	6955.11000,	631.5,	0.0 !	!END!
1420 ! X =	396.82400,	6954.85000,	624.5,	0.0 !	!END!
1421 ! X =	396.82400,	6954.96000,	628.9,	0.0 !	!END!
1422 ! X =	396.82700,	6954.58000,	614.9,	0.0 !	!END!
1423 ! X =	396.82800,	6955.05000,	631.1,	0.0 !	!END!
1424 ! X =	396.82900,	6954.24000,	618.9,	0.0 !	!END!
1425 ! X =	396.82900,	6954.78000,	622.4,	0.0 !	!END!
1426 ! X =	396.82900,	6954.99000,	630.0,	0.0 !	!END!
1427 ! X =	396.83400,	6955.09000,	632.1,	0.0 !	!END!
1428 ! X =	396.83600,	6954.90000,	627.0,	0.0 !	!END!
1429 ! X =	396.83700,	6955.11000,	632.1,	0.0 !	!END!
1430 ! X =	396.83700,	6955.11000,	632.1,	0.0 !	!END!
1431 ! X =	396.83800,	6954.80000,	623.8,	0.0 !	!END!
1432 ! X =	396.84000,	6954.95000,	629.1,	0.0 !	!END!
1433 ! X =	396.84100,	6954.28000,	618.9,	0.0 !	!END!
1434 ! X =	396.84100,	6955.15000,	632.7,	0.0 !	!END!
1435 ! X =	396.84100,	6955.15000,	632.7,	0.0 !	!END!
1436 ! X =	396.84300,	6955.05000,	632.0,	0.0 !	!END!
1437 ! X =	396.84400,	6954.64000,	616.4,	0.0 !	!END!
1438 ! X =	396.84500,	6954.99000,	630.7,	0.0 !	!END!
1439 ! X =	396.84800,	6954.84000,	626.0,	0.0 !	!END!

1440 ! X =	396.84900,	6955.17000,	631.6,	0.0 !	!END!
1441 ! X =	396.84900,	6954.87000,	627.3,	0.0 !	!END!
1442 ! X =	396.85000,	6955.18000,	631.7,	0.0 !	!END!
1443 ! X =	396.85100,	6954.66000,	617.6,	0.0 !	!END!
1444 ! X =	396.85500,	6954.88000,	627.6,	0.0 !	!END!
1445 ! X =	396.85500,	6955.08000,	633.1,	0.0 !	!END!
1446 ! X =	396.85500,	6955.08000,	633.1,	0.0 !	!END!
1447 ! X =	396.85600,	6955.10000,	632.9,	0.0 !	!END!
1448 ! X =	396.85600,	6955.10000,	632.9,	0.0 !	!END!
1449 ! X =	396.85800,	6955.05000,	632.9,	0.0 !	!END!
1450 ! X =	396.85900,	6955.15000,	633.1,	0.0 !	!END!
1451 ! X =	396.85900,	6955.15000,	633.1,	0.0 !	!END!
1452 ! X =	396.86000,	6954.37000,	616.7,	0.0 !	!END!
1453 ! X =	396.86100,	6954.68000,	618.0,	0.0 !	!END!
1454 ! X =	396.86200,	6954.90000,	628.0,	0.0 !	!END!
1455 ! X =	396.86600,	6954.64000,	617.1,	0.0 !	!END!
1456 ! X =	396.86600,	6954.69000,	618.2,	0.0 !	!END!
1457 ! X =	396.86700,	6954.94000,	629.6,	0.0 !	!END!
1458 ! X =	396.87000,	6954.71000,	619.1,	0.0 !	!END!
1459 ! X =	396.87000,	6954.96000,	630.7,	0.0 !	!END!
1460 ! X =	396.87300,	6954.98000,	631.6,	0.0 !	!END!
1461 ! X =	396.87300,	6955.05000,	634.2,	0.0 !	!END!
1462 ! X =	396.87400,	6954.72000,	619.6,	0.0 !	!END!
1463 ! X =	396.87700,	6955.08000,	634.0,	0.0 !	!END!
1464 ! X =	396.87700,	6955.08000,	634.0,	0.0 !	!END!
1465 ! X =	396.87800,	6954.74000,	620.9,	0.0 !	!END!
1466 ! X =	396.87900,	6955.00000,	632.8,	0.0 !	!END!
1467 ! X =	396.88100,	6954.75000,	621.6,	0.0 !	!END!
1468 ! X =	396.88200,	6954.65000,	617.8,	0.0 !	!END!
1469 ! X =	396.88400,	6956.86000,	699.2,	0.0 !	!END!
1470 ! X =	396.88500,	6954.77000,	623.9,	0.0 !	!END!
1471 ! X =	396.88500,	6954.79000,	625.6,	0.0 !	!END!
1472 ! X =	396.88900,	6955.04000,	634.6,	0.0 !	!END!
1473 ! X =	396.89100,	6954.07000,	630.7,	0.0 !	!END!
1474 ! X =	396.89400,	6954.84000,	628.9,	0.0 !	!END!
1475 ! X =	396.89500,	6955.15000,	633.8,	0.0 !	!END!
1476 ! X =	396.89800,	6954.00000,	631.0,	0.0 !	!END!
1477 ! X =	396.89800,	6954.11000,	628.4,	0.0 !	!END!
1478 ! X =	396.89800,	6956.55000,	674.0,	0.0 !	!END!
1479 ! X =	396.90100,	6954.12000,	627.9,	0.0 !	!END!
1480 ! X =	396.90200,	6954.04000,	631.0,	0.0 !	!END!
1481 ! X =	396.90200,	6954.65000,	617.7,	0.0 !	!END!
1482 ! X =	396.90300,	6955.08000,	634.7,	0.0 !	!END!
1483 ! X =	396.90300,	6954.67000,	617.8,	0.0 !	!END!
1484 ! X =	396.90400,	6954.02000,	631.0,	0.0 !	!END!
1485 ! X =	396.90500,	6954.68000,	617.9,	0.0 !	!END!
1486 ! X =	396.90600,	6954.15000,	626.1,	0.0 !	!END!
1487 ! X =	396.90700,	6954.79000,	626.3,	0.0 !	!END!
1488 ! X =	396.90900,	6954.70000,	618.6,	0.0 !	!END!
1489 ! X =	396.91300,	6954.09000,	630.7,	0.0 !	!END!
1490 ! X =	396.91300,	6954.71000,	619.1,	0.0 !	!END!
1491 ! X =	396.91300,	6954.84000,	629.1,	0.0 !	!END!
1492 ! X =	396.91300,	6954.88000,	629.1,	0.0 !	!END!
1493 ! X =	396.91500,	6954.38000,	617.9,	0.0 !	!END!
1494 ! X =	396.91700,	6954.73000,	620.4,	0.0 !	!END!
1495 ! X =	396.91700,	6954.90000,	629.1,	0.0 !	!END!
1496 ! X =	396.91900,	6954.07000,	631.0,	0.0 !	!END!
1497 ! X =	396.92000,	6954.74000,	622.1,	0.0 !	!END!
1498 ! X =	396.92100,	6954.91000,	630.0,	0.0 !	!END!
1499 ! X =	396.92200,	6955.49100,	628.3,	0.0 !	!END!
1500 ! X =	396.92400,	6954.78000,	626.3,	0.0 !	!END!
1501 ! X =	396.92500,	6954.93000,	630.8,	0.0 !	!END!
1502 ! X =	396.92600,	6954.09000,	630.8,	0.0 !	!END!
1503 ! X =	396.92600,	6954.19000,	625.7,	0.0 !	!END!
1504 ! X =	396.92600,	6954.76000,	624.7,	0.0 !	!END!
1505 ! X =	396.92900,	6954.44000,	617.6,	0.0 !	!END!
1506 ! X =	396.92900,	6954.94000,	631.2,	0.0 !	!END!
1507 ! X =	396.93100,	6954.14000,	629.2,	0.0 !	!END!
1508 ! X =	396.93200,	6954.84000,	629.1,	0.0 !	!END!
1509 ! X =	396.93300,	6954.96000,	632.7,	0.0 !	!END!
1510 ! X =	396.93700,	6954.97000,	633.1,	0.0 !	!END!

1511 ! X = 396.94100, 6954.99000, 633.8, 0.0 ! !END!
1512 ! X = 396.94200, 6954.78000, 626.4, 0.0 ! !END!
1513 ! X = 396.94400, 6954.01000, 632.5, 0.0 ! !END!
1514 ! X = 396.94400, 6955.00000, 634.1, 0.0 ! !END!
1515 ! X = 396.94500, 6957.19000, 700.1, 0.0 ! !END!
1516 ! X = 396.94500, 6955.02000, 634.6, 0.0 ! !END!
1517 ! X = 396.94500, 6955.05000, 634.9, 0.0 ! !END!
1518 ! X = 396.94600, 6954.08000, 631.1, 0.0 ! !END!
1519 ! X = 396.94800, 6954.18000, 627.0, 0.0 ! !END!
1520 ! X = 396.95200, 6954.83000, 628.9, 0.0 ! !END!
1521 ! X = 396.95200, 6954.87000, 629.1, 0.0 ! !END!
1522 ! X = 396.95300, 6954.13000, 630.1, 0.0 ! !END!
1523 ! X = 396.95300, 6954.20000, 626.1, 0.0 ! !END!
1524 ! X = 396.95400, 6954.62000, 618.5, 0.0 ! !END!
1525 ! X = 396.95400, 6954.66000, 618.0, 0.0 ! !END!
1526 ! X = 396.95600, 6954.89000, 629.9, 0.0 ! !END!
1527 ! X = 396.95700, 6955.09000, 634.0, 0.0 ! !END!
1528 ! X = 396.95900, 6957.16000, 699.1, 0.0 ! !END!
1529 ! X = 396.96000, 6954.90000, 630.3, 0.0 ! !END!
1530 ! X = 396.96000, 6957.09000, 700.7, 0.0 ! !END!
1531 ! X = 396.96100, 6954.60000, 618.3, 0.0 ! !END!
1532 ! X = 396.96200, 6954.01000, 633.9, 0.0 ! !END!
1533 ! X = 396.96200, 6954.69000, 619.8, 0.0 ! !END!
1534 ! X = 396.96400, 6954.92000, 631.0, 0.0 ! !END!
1535 ! X = 396.96500, 6954.19000, 627.2, 0.0 ! !END!
1536 ! X = 396.96500, 6954.22000, 626.1, 0.0 ! !END!
1537 ! X = 396.96500, 6955.04000, 634.8, 0.0 ! !END!
1538 ! X = 396.96600, 6954.26000, 624.7, 0.0 ! !END!
1539 ! X = 396.96600, 6954.58000, 618.5, 0.0 ! !END!
1540 ! X = 396.96700, 6957.13000, 699.0, 0.0 ! !END!
1541 ! X = 396.96800, 6954.07000, 632.2, 0.0 ! !END!
1542 ! X = 396.96800, 6954.93000, 631.4, 0.0 ! !END!
1543 ! X = 396.97000, 6954.24000, 625.7, 0.0 ! !END!
1544 ! X = 396.97000, 6954.56000, 618.7, 0.0 ! !END!
1545 ! X = 396.97000, 6954.71000, 621.1, 0.0 ! !END!
1546 ! X = 396.97000, 6957.04900, 700.2, 0.0 ! !END!
1547 ! X = 396.97200, 6955.11600, 632.9, 0.0 ! !END!
1548 ! X = 396.97200, 6955.13400, 632.3, 0.0 ! !END!
1549 ! X = 396.97200, 6954.95000, 632.2, 0.0 ! !END!
1550 ! X = 396.97200, 6955.36900, 624.3, 0.0 ! !END!
1551 ! X = 396.97400, 6954.13000, 630.8, 0.0 ! !END!
1552 ! X = 396.97500, 6954.72000, 621.9, 0.0 ! !END!
1553 ! X = 396.97600, 6954.96000, 633.0, 0.0 ! !END!
1554 ! X = 396.97700, 6954.62000, 619.3, 0.0 ! !END!
1555 ! X = 396.97800, 6954.67000, 619.9, 0.0 ! !END!
1556 ! X = 396.97800, 6957.20000, 699.6, 0.0 ! !END!
1557 ! X = 396.97900, 6955.15100, 631.6, 0.0 ! !END!
1558 ! X = 396.98000, 6954.74000, 623.4, 0.0 ! !END!
1559 ! X = 396.98000, 6954.98000, 633.6, 0.0 ! !END!
1560 ! X = 396.98200, 6954.78000, 626.4, 0.0 ! !END!
1561 ! X = 396.98200, 6955.03000, 634.7, 0.0 ! !END!
1562 ! X = 396.98200, 6955.09000, 633.5, 0.0 ! !END!
1563 ! X = 396.98300, 6954.19000, 628.7, 0.0 ! !END!
1564 ! X = 396.98400, 6954.00000, 636.1, 0.0 ! !END!
1565 ! X = 396.98400, 6954.20000, 628.2, 0.0 ! !END!
1566 ! X = 396.98400, 6954.75000, 624.1, 0.0 ! !END!
1567 ! X = 396.98400, 6955.00000, 634.4, 0.0 ! !END!
1568 ! X = 396.98800, 6954.08000, 633.4, 0.0 ! !END!
1569 ! X = 396.98900, 6954.30000, 625.4, 0.0 ! !END!
1570 ! X = 396.98900, 6954.57000, 619.1, 0.0 ! !END!
1571 ! X = 396.99100, 6955.01000, 634.6, 0.0 ! !END!
1572 ! X = 396.99200, 6954.26000, 625.9, 0.0 ! !END!
1573 ! X = 396.99200, 6954.62000, 619.9, 0.0 ! !END!
1574 ! X = 396.99500, 6954.12000, 633.4, 0.0 ! !END!
1575 ! X = 396.99500, 6954.32000, 625.2, 0.0 ! !END!
1576 ! X = 396.99500, 6954.68000, 621.2, 0.0 ! !END!
1577 ! X = 396.99500, 6954.83000, 628.9, 0.0 ! !END!
1578 ! X = 396.99600, 6956.93800, 694.7, 0.0 ! !END!
1579 ! X = 396.99900, 6956.89700, 694.7, 0.0 ! !END!
1580 ! X = 396.99900, 6955.09000, 633.1, 0.0 ! !END!
1581 ! X = 397.00000, 6957.23000, 699.1, 0.0 ! !END!

1582 ! X =	397.00100,	6954.70000,	622.3,	0.0 !	!END!
1583 ! X =	397.00200,	6954.77000,	626.8,	0.0 !	!END!
1584 ! X =	397.00200,	6955.03000,	634.8,	0.0 !	!END!
1585 ! X =	397.00300,	6954.58000,	620.4,	0.0 !	!END!
1586 ! X =	397.00400,	6955.14200,	631.0,	0.0 !	!END!
1587 ! X =	397.00400,	6954.00000,	637.7,	0.0 !	!END!
1588 ! X =	397.00400,	6954.19000,	630.0,	0.0 !	!END!
1589 ! X =	397.00600,	6954.07000,	634.9,	0.0 !	!END!
1590 ! X =	397.00700,	6954.62000,	620.5,	0.0 !	!END!
1591 ! X =	397.00700,	6954.71000,	623.0,	0.0 !	!END!
1592 ! X =	397.01100,	6954.24000,	629.0,	0.0 !	!END!
1593 ! X =	397.01100,	6954.88000,	631.0,	0.0 !	!END!
1594 ! X =	397.01400,	6954.72000,	623.7,	0.0 !	!END!
1595 ! X =	397.01500,	6954.12000,	634.6,	0.0 !	!END!
1596 ! X =	397.01500,	6955.08000,	633.3,	0.0 !	!END!
1597 ! X =	397.01600,	6954.30000,	626.7,	0.0 !	!END!
1598 ! X =	397.01600,	6954.83000,	629.2,	0.0 !	!END!
1599 ! X =	397.01700,	6954.87000,	631.0,	0.0 !	!END!
1600 ! X =	397.01700,	6954.87000,	631.0,	0.0 !	!END!
1601 ! X =	397.01800,	6954.33000,	625.8,	0.0 !	!END!
1602 ! X =	397.01800,	6954.35000,	625.0,	0.0 !	!END!
1603 ! X =	397.01800,	6954.58000,	620.9,	0.0 !	!END!
1604 ! X =	397.01900,	6955.13700,	630.9,	0.0 !	!END!
1605 ! X =	397.02000,	6954.74000,	625.1,	0.0 !	!END!
1606 ! X =	397.02100,	6956.77200,	686.9,	0.0 !	!END!
1607 ! X =	397.02300,	6954.36000,	624.4,	0.0 !	!END!
1608 ! X =	397.02400,	6953.99000,	640.3,	0.0 !	!END!
1609 ! X =	397.02400,	6954.77000,	627.4,	0.0 !	!END!
1610 ! X =	397.02500,	6954.19000,	631.6,	0.0 !	!END!
1611 ! X =	397.02700,	6954.63000,	621.6,	0.0 !	!END!
1612 ! X =	397.02900,	6954.07000,	638.0,	0.0 !	!END!
1613 ! X =	397.02900,	6954.38000,	623.8,	0.0 !	!END!
1614 ! X =	397.02900,	6954.75000,	625.3,	0.0 !	!END!
1615 ! X =	397.03000,	6955.08000,	633.6,	0.0 !	!END!
1616 ! X =	397.03000,	6954.87000,	631.7,	0.0 !	!END!
1617 ! X =	397.03100,	6955.13200,	631.1,	0.0 !	!END!
1618 ! X =	397.03100,	6954.24000,	631.0,	0.0 !	!END!
1619 ! X =	397.03100,	6954.30000,	628.5,	0.0 !	!END!
1620 ! X =	397.03200,	6957.17000,	696.3,	0.0 !	!END!
1621 ! X =	397.03300,	6957.25000,	697.2,	0.0 !	!END!
1622 ! X =	397.03500,	6954.82000,	629.7,	0.0 !	!END!
1623 ! X =	397.03600,	6954.12000,	636.7,	0.0 !	!END!
1624 ! X =	397.03800,	6956.96900,	690.2,	0.0 !	!END!
1625 ! X =	397.04100,	6957.20000,	696.7,	0.0 !	!END!
1626 ! X =	397.04500,	6954.98000,	633.6,	0.0 !	!END!
1627 ! X =	397.04500,	6954.30000,	629.4,	0.0 !	!END!
1628 ! X =	397.04500,	6955.07000,	634.3,	0.0 !	!END!
1629 ! X =	397.04600,	6955.12600,	631.2,	0.0 !	!END!
1630 ! X =	397.04600,	6954.18000,	633.0,	0.0 !	!END!
1631 ! X =	397.04700,	6954.77000,	627.0,	0.0 !	!END!
1632 ! X =	397.04700,	6954.87000,	632.1,	0.0 !	!END!
1633 ! X =	397.04700,	6954.87000,	632.1,	0.0 !	!END!
1634 ! X =	397.04900,	6954.59000,	622.1,	0.0 !	!END!
1635 ! X =	397.05000,	6954.07000,	640.1,	0.0 !	!END!
1636 ! X =	397.05100,	6954.67000,	623.5,	0.0 !	!END!
1637 ! X =	397.05200,	6954.96000,	634.1,	0.0 !	!END!
1638 ! X =	397.05200,	6954.23000,	632.4,	0.0 !	!END!
1639 ! X =	397.05300,	6954.37700,	624.7,	0.0 !	!END!
1640 ! X =	397.05300,	6954.82000,	630.5,	0.0 !	!END!
1641 ! X =	397.05300,	6957.27000,	696.1,	0.0 !	!END!
1642 ! X =	397.05500,	6956.69200,	672.7,	0.0 !	!END!
1643 ! X =	397.05700,	6954.11000,	638.8,	0.0 !	!END!
1644 ! X =	397.05800,	6954.68000,	623.8,	0.0 !	!END!
1645 ! X =	397.05900,	6954.63000,	622.8,	0.0 !	!END!
1646 ! X =	397.06000,	6954.31000,	629.8,	0.0 !	!END!
1647 ! X =	397.06100,	6955.07000,	635.0,	0.0 !	!END!
1648 ! X =	397.06100,	6954.41000,	623.6,	0.0 !	!END!
1649 ! X =	397.06300,	6954.70000,	624.2,	0.0 !	!END!
1650 ! X =	397.06400,	6955.12000,	631.8,	0.0 !	!END!
1651 ! X =	397.06600,	6954.18000,	635.1,	0.0 !	!END!
1652 ! X =	397.06600,	6954.43000,	623.3,	0.0 !	!END!

1653 ! X = 397.06700, 6954.46000, 622.8, 0.0 ! !END!
1654 ! X = 397.06900, 6954.87000, 632.5, 0.0 ! !END!
1655 ! X = 397.06900, 6954.87000, 632.5, 0.0 ! !END!
1656 ! X = 397.07000, 6954.06000, 642.1, 0.0 ! !END!
1657 ! X = 397.07000, 6957.23000, 696.9, 0.0 ! !END!
1658 ! X = 397.07100, 6954.37700, 625.0, 0.0 ! !END!
1659 ! X = 397.07100, 6954.71000, 624.1, 0.0 ! !END!
1660 ! X = 397.07200, 6954.45000, 623.2, 0.0 ! !END!
1661 ! X = 397.07300, 6954.23000, 633.3, 0.0 ! !END!
1662 ! X = 397.07400, 6954.82000, 631.3, 0.0 ! !END!
1663 ! X = 397.07700, 6954.11000, 640.5, 0.0 ! !END!
1664 ! X = 397.07700, 6954.29000, 631.9, 0.0 ! !END!
1665 ! X = 397.07700, 6954.48400, 622.8, 0.0 ! !END!
1666 ! X = 397.07800, 6955.11700, 632.3, 0.0 ! !END!
1667 ! X = 397.07800, 6954.73000, 624.9, 0.0 ! !END!
1668 ! X = 397.07900, 6955.06000, 636.0, 0.0 ! !END!
1669 ! X = 397.08300, 6954.75000, 626.1, 0.0 ! !END!
1670 ! X = 397.08400, 6954.64000, 623.2, 0.0 ! !END!
1671 ! X = 397.08500, 6957.09400, 688.1, 0.0 ! !END!
1672 ! X = 397.08700, 6954.18000, 635.7, 0.0 ! !END!
1673 ! X = 397.09000, 6954.86000, 632.5, 0.0 ! !END!
1674 ! X = 397.09000, 6954.86000, 632.5, 0.0 ! !END!
1675 ! X = 397.09100, 6954.06000, 643.9, 0.0 ! !END!
1676 ! X = 397.09100, 6954.65000, 623.4, 0.0 ! !END!
1677 ! X = 397.09200, 6954.22000, 634.3, 0.0 ! !END!
1678 ! X = 397.09400, 6956.98000, 686.8, 0.0 ! !END!
1679 ! X = 397.09400, 6955.11200, 633.3, 0.0 ! !END!
1680 ! X = 397.09400, 6957.29000, 696.1, 0.0 ! !END!
1681 ! X = 397.09500, 6954.29000, 632.9, 0.0 ! !END!
1682 ! X = 397.09700, 6954.36700, 625.8, 0.0 ! !END!
1683 ! X = 397.09700, 6954.24000, 634.2, 0.0 ! !END!
1684 ! X = 397.09700, 6954.67000, 623.4, 0.0 ! !END!
1685 ! X = 397.09800, 6954.11000, 641.6, 0.0 ! !END!
1686 ! X = 397.09800, 6954.43000, 623.2, 0.0 ! !END!
1687 ! X = 397.09800, 6954.75000, 626.2, 0.0 ! !END!
1688 ! X = 397.09800, 6955.06000, 636.9, 0.0 ! !END!
1689 ! X = 397.10400, 6957.27000, 697.1, 0.0 ! !END!
1690 ! X = 397.10400, 6954.69000, 623.5, 0.0 ! !END!
1691 ! X = 397.10400, 6956.84500, 683.9, 0.0 ! !END!
1692 ! X = 397.10800, 6954.49100, 623.2, 0.0 ! !END!
1693 ! X = 397.10800, 6954.18000, 636.0, 0.0 ! !END!
1694 ! X = 397.10900, 6953.98000, 645.5, 0.0 ! !END!
1695 ! X = 397.11000, 6955.10500, 634.4, 0.0 ! !END!
1696 ! X = 397.11100, 6954.80000, 630.6, 0.0 ! !END!
1697 ! X = 397.11100, 6955.04000, 637.2, 0.0 ! !END!
1698 ! X = 397.11100, 6957.18000, 695.0, 0.0 ! !END!
1699 ! X = 397.11200, 6954.06000, 644.1, 0.0 ! !END!
1700 ! X = 397.11200, 6954.74000, 625.5, 0.0 ! !END!
1701 ! X = 397.11300, 6954.71000, 624.0, 0.0 ! !END!
1702 ! X = 397.11400, 6954.22000, 634.4, 0.0 ! !END!
1703 ! X = 397.11500, 6954.30000, 632.9, 0.0 ! !END!
1704 ! X = 397.11500, 6954.98000, 635.4, 0.0 ! !END!
1705 ! X = 397.11800, 6954.97000, 635.0, 0.0 ! !END!
1706 ! X = 397.11800, 6955.01000, 636.2, 0.0 ! !END!
1707 ! X = 397.11800, 6955.03100, 637.0, 0.0 ! !END!
1708 ! X = 397.11900, 6954.11000, 642.2, 0.0 ! !END!
1709 ! X = 397.11900, 6954.94000, 633.1, 0.0 ! !END!
1710 ! X = 397.11900, 6957.12000, 688.3, 0.0 ! !END!
1711 ! X = 397.12000, 6954.43000, 623.1, 0.0 ! !END!
1712 ! X = 397.12500, 6954.36700, 627.7, 0.0 ! !END!
1713 ! X = 397.12700, 6954.49300, 623.3, 0.0 ! !END!
1714 ! X = 397.12700, 6954.73000, 624.2, 0.0 ! !END!
1715 ! X = 397.12900, 6955.09700, 635.1, 0.0 ! !END!
1716 ! X = 397.12900, 6954.16000, 639.8, 0.0 ! !END!
1717 ! X = 397.13100, 6954.79000, 629.5, 0.0 ! !END!
1718 ! X = 397.13200, 6953.98000, 647.5, 0.0 ! !END!
1719 ! X = 397.13300, 6954.05000, 644.1, 0.0 ! !END!
1720 ! X = 397.13300, 6954.29000, 634.1, 0.0 ! !END!
1721 ! X = 397.13400, 6955.08100, 636.3, 0.0 ! !END!
1722 ! X = 397.13400, 6954.92000, 632.3, 0.0 ! !END!
1723 ! X = 397.13400, 6956.74200, 668.9, 0.0 ! !END!

1724 ! X =	397.13500,	6957.22000,	696.5,	0.0 !	!END!
1725 ! X =	397.13500,	6954.22000,	634.6,	0.0 !	!END!
1726 ! X =	397.13500,	6954.82000,	632.1,	0.0 !	!END!
1727 ! X =	397.13700,	6954.91000,	632.2,	0.0 !	!END!
1728 ! X =	397.14000,	6954.10000,	643.8,	0.0 !	!END!
1729 ! X =	397.14000,	6954.89000,	632.2,	0.0 !	!END!
1730 ! X =	397.14000,	6957.32000,	692.8,	0.0 !	!END!
1731 ! X =	397.14100,	6954.72000,	623.7,	0.0 !	!END!
1732 ! X =	397.14300,	6954.36700,	628.1,	0.0 !	!END!
1733 ! X =	397.14300,	6954.42000,	623.5,	0.0 !	!END!
1734 ! X =	397.14400,	6955.06900,	636.5,	0.0 !	!END!
1735 ! X =	397.14400,	6954.87000,	632.4,	0.0 !	!END!
1736 ! X =	397.14600,	6957.30000,	694.6,	0.0 !	!END!
1737 ! X =	397.14600,	6954.78000,	628.2,	0.0 !	!END!
1738 ! X =	397.14800,	6954.49700,	622.7,	0.0 !	!END!
1739 ! X =	397.14900,	6954.17000,	639.7,	0.0 !	!END!
1740 ! X =	397.14900,	6957.15000,	688.2,	0.0 !	!END!
1741 ! X =	397.15000,	6955.04000,	636.5,	0.0 !	!END!
1742 ! X =	397.15100,	6954.29000,	633.7,	0.0 !	!END!
1743 ! X =	397.15100,	6956.80100,	677.0,	0.0 !	!END!
1744 ! X =	397.15300,	6953.98000,	648.3,	0.0 !	!END!
1745 ! X =	397.15300,	6954.05000,	644.4,	0.0 !	!END!
1746 ! X =	397.15600,	6954.85000,	632.1,	0.0 !	!END!
1747 ! X =	397.15600,	6954.22000,	636.2,	0.0 !	!END!
1748 ! X =	397.16000,	6954.10000,	644.1,	0.0 !	!END!
1749 ! X =	397.16100,	6954.99000,	634.4,	0.0 !	!END!
1750 ! X =	397.16100,	6954.42000,	625.1,	0.0 !	!END!
1751 ! X =	397.16200,	6954.35700,	629.6,	0.0 !	!END!
1752 ! X =	397.16200,	6954.97000,	633.5,	0.0 !	!END!
1753 ! X =	397.16300,	6955.03200,	635.2,	0.0 !	!END!
1754 ! X =	397.16300,	6954.77000,	626.7,	0.0 !	!END!
1755 ! X =	397.16400,	6954.91000,	631.6,	0.0 !	!END!
1756 ! X =	397.16400,	6954.94000,	632.0,	0.0 !	!END!
1757 ! X =	397.16500,	6957.18000,	690.1,	0.0 !	!END!
1758 ! X =	397.16600,	6954.49500,	623.4,	0.0 !	!END!
1759 ! X =	397.16800,	6954.89000,	631.4,	0.0 !	!END!
1760 ! X =	397.16900,	6953.72000,	650.4,	0.0 !	!END!
1761 ! X =	397.16900,	6956.83400,	677.6,	0.0 !	!END!
1762 ! X =	397.17000,	6954.17000,	640.8,	0.0 !	!END!
1763 ! X =	397.17000,	6954.29000,	634.7,	0.0 !	!END!
1764 ! X =	397.17200,	6955.01900,	634.1,	0.0 !	!END!
1765 ! X =	397.17200,	6953.97000,	650.1,	0.0 !	!END!
1766 ! X =	397.17400,	6954.05000,	646.4,	0.0 !	!END!
1767 ! X =	397.17700,	6954.21000,	638.4,	0.0 !	!END!
1768 ! X =	397.17700,	6954.42000,	626.0,	0.0 !	!END!
1769 ! X =	397.17800,	6954.91000,	630.8,	0.0 !	!END!
1770 ! X =	397.18000,	6954.35700,	630.2,	0.0 !	!END!
1771 ! X =	397.18000,	6954.84000,	629.9,	0.0 !	!END!
1772 ! X =	397.18100,	6954.10000,	646.1,	0.0 !	!END!
1773 ! X =	397.18300,	6954.80100,	627.9,	0.0 !	!END!
1774 ! X =	397.18300,	6954.89000,	630.6,	0.0 !	!END!
1775 ! X =	397.18300,	6957.03800,	680.8,	0.0 !	!END!
1776 ! X =	397.18400,	6957.21000,	689.9,	0.0 !	!END!
1777 ! X =	397.18600,	6954.88000,	630.4,	0.0 !	!END!
1778 ! X =	397.18600,	6957.33000,	689.4,	0.0 !	!END!
1779 ! X =	397.18700,	6954.86000,	630.3,	0.0 !	!END!
1780 ! X =	397.18800,	6954.81300,	628.1,	0.0 !	!END!
1781 ! X =	397.18800,	6954.49400,	623.5,	0.0 !	!END!
1782 ! X =	397.18800,	6954.29000,	635.4,	0.0 !	!END!
1783 ! X =	397.18900,	6957.32000,	689.0,	0.0 !	!END!
1784 ! X =	397.19100,	6954.16000,	642.8,	0.0 !	!END!
1785 ! X =	397.19200,	6953.97000,	651.4,	0.0 !	!END!
1786 ! X =	397.19200,	6954.90000,	630.1,	0.0 !	!END!
1787 ! X =	397.19400,	6954.90000,	629.9,	0.0 !	!END!
1788 ! X =	397.19400,	6954.42000,	626.9,	0.0 !	!END!
1789 ! X =	397.19500,	6954.05000,	648.5,	0.0 !	!END!
1790 ! X =	397.19700,	6954.21000,	640.3,	0.0 !	!END!
1791 ! X =	397.19900,	6954.35700,	630.9,	0.0 !	!END!
1792 ! X =	397.19900,	6954.70000,	622.0,	0.0 !	!END!
1793 ! X =	397.20200,	6954.09000,	647.7,	0.0 !	!END!
1794 ! X =	397.20700,	6954.28000,	636.9,	0.0 !	!END!

1795 ! X =	397.20800,	6954.48800,	623.8,	0.0 !	!END!
1796 ! X =	397.21200,	6954.16000,	644.3,	0.0 !	!END!
1797 ! X =	397.21500,	6954.04000,	651.2,	0.0 !	!END!
1798 ! X =	397.21700,	6954.72000,	621.5,	0.0 !	!END!
1799 ! X =	397.21700,	6953.97000,	653.4,	0.0 !	!END!
1800 ! X =	397.21800,	6954.21000,	642.3,	0.0 !	!END!
1801 ! X =	397.21900,	6957.24000,	686.6,	0.0 !	!END!
1802 ! X =	397.21900,	6954.41000,	628.5,	0.0 !	!END!
1803 ! X =	397.22000,	6955.11000,	621.5,	0.0 !	!END!
1804 ! X =	397.22000,	6957.33000,	685.0,	0.0 !	!END!
1805 ! X =	397.22200,	6954.09000,	650.4,	0.0 !	!END!
1806 ! X =	397.22500,	6954.28000,	639.5,	0.0 !	!END!
1807 ! X =	397.22600,	6954.35700,	631.7,	0.0 !	!END!
1808 ! X =	397.23000,	6954.48800,	625.0,	0.0 !	!END!
1809 ! X =	397.23000,	6955.06900,	625.3,	0.0 !	!END!
1810 ! X =	397.23200,	6954.16000,	646.2,	0.0 !	!END!
1811 ! X =	397.23600,	6953.96000,	657.2,	0.0 !	!END!
1812 ! X =	397.23600,	6954.67000,	619.1,	0.0 !	!END!
1813 ! X =	397.23600,	6954.04000,	654.6,	0.0 !	!END!
1814 ! X =	397.23900,	6954.21000,	644.4,	0.0 !	!END!
1815 ! X =	397.24000,	6954.40000,	628.9,	0.0 !	!END!
1816 ! X =	397.24300,	6954.09000,	652.7,	0.0 !	!END!
1817 ! X =	397.24300,	6957.34000,	683.8,	0.0 !	!END!
1818 ! X =	397.24400,	6953.71000,	653.1,	0.0 !	!END!
1819 ! X =	397.24400,	6954.28000,	641.6,	0.0 !	!END!
1820 ! X =	397.24500,	6955.02100,	627.6,	0.0 !	!END!
1821 ! X =	397.24800,	6957.27000,	683.6,	0.0 !	!END!
1822 ! X =	397.24900,	6954.72000,	619.8,	0.0 !	!END!
1823 ! X =	397.25000,	6954.96600,	627.5,	0.0 !	!END!
1824 ! X =	397.25200,	6954.99100,	627.1,	0.0 !	!END!
1825 ! X =	397.25200,	6954.34000,	635.5,	0.0 !	!END!
1826 ! X =	397.25300,	6954.16000,	647.5,	0.0 !	!END!
1827 ! X =	397.25400,	6955.05300,	626.3,	0.0 !	!END!
1828 ! X =	397.25700,	6955.11000,	620.5,	0.0 !	!END!
1829 ! X =	397.25700,	6954.04000,	656.6,	0.0 !	!END!
1830 ! X =	397.25700,	6954.40000,	628.9,	0.0 !	!END!
1831 ! X =	397.26000,	6954.20000,	645.9,	0.0 !	!END!
1832 ! X =	397.26100,	6953.96000,	658.7,	0.0 !	!END!
1833 ! X =	397.26200,	6954.27000,	644.1,	0.0 !	!END!
1834 ! X =	397.26400,	6954.08000,	655.5,	0.0 !	!END!
1835 ! X =	397.26600,	6957.35000,	682.5,	0.0 !	!END!
1836 ! X =	397.27100,	6954.34000,	636.4,	0.0 !	!END!
1837 ! X =	397.27300,	6954.78800,	618.4,	0.0 !	!END!
1838 ! X =	397.27300,	6957.28000,	682.5,	0.0 !	!END!
1839 ! X =	397.27400,	6954.15000,	651.5,	0.0 !	!END!
1840 ! X =	397.27500,	6954.90000,	621.5,	0.0 !	!END!
1841 ! X =	397.27600,	6954.39000,	629.4,	0.0 !	!END!
1842 ! X =	397.27800,	6954.03000,	658.1,	0.0 !	!END!
1843 ! X =	397.27900,	6954.87700,	621.7,	0.0 !	!END!
1844 ! X =	397.28000,	6953.95000,	659.9,	0.0 !	!END!
1845 ! X =	397.28000,	6954.84000,	619.5,	0.0 !	!END!
1846 ! X =	397.28100,	6954.20000,	647.1,	0.0 !	!END!
1847 ! X =	397.28100,	6954.27000,	646.2,	0.0 !	!END!
1848 ! X =	397.28500,	6954.08000,	658.6,	0.0 !	!END!
1849 ! X =	397.29000,	6957.36000,	681.0,	0.0 !	!END!
1850 ! X =	397.29000,	6955.03100,	628.1,	0.0 !	!END!
1851 ! X =	397.29100,	6955.10200,	622.7,	0.0 !	!END!
1852 ! X =	397.29100,	6954.92900,	622.3,	0.0 !	!END!
1853 ! X =	397.29200,	6954.45600,	626.3,	0.0 !	!END!
1854 ! X =	397.29200,	6954.39000,	629.1,	0.0 !	!END!
1855 ! X =	397.29300,	6954.34000,	637.2,	0.0 !	!END!
1856 ! X =	397.29500,	6954.15000,	652.5,	0.0 !	!END!
1857 ! X =	397.29800,	6953.95000,	660.6,	0.0 !	!END!
1858 ! X =	397.29800,	6954.03000,	659.3,	0.0 !	!END!
1859 ! X =	397.29800,	6954.98700,	627.5,	0.0 !	!END!
1860 ! X =	397.29900,	6954.27000,	647.2,	0.0 !	!END!
1861 ! X =	397.29900,	6957.28000,	681.7,	0.0 !	!END!
1862 ! X =	397.30100,	6954.20000,	647.5,	0.0 !	!END!
1863 ! X =	397.30500,	6954.08000,	659.1,	0.0 !	!END!
1864 ! X =	397.30500,	6954.95800,	625.3,	0.0 !	!END!
1865 ! X =	397.31000,	6954.39000,	628.8,	0.0 !	!END!

1866 ! X = 397.31000, 6957.19000, 679.3, 0.0 ! !END!
1867 ! X = 397.31000, 6955.07900, 628.3, 0.0 ! !END!
1868 ! X = 397.31400, 6957.15000, 672.9, 0.0 ! !END!
1869 ! X = 397.31500, 6953.80000, 663.1, 0.0 ! !END!
1870 ! X = 397.31500, 6954.15000, 653.2, 0.0 ! !END!
1871 ! X = 397.31600, 6957.35000, 681.2, 0.0 ! !END!
1872 ! X = 397.31800, 6954.27000, 647.7, 0.0 ! !END!
1873 ! X = 397.31900, 6954.03000, 659.5, 0.0 ! !END!
1874 ! X = 397.32000, 6953.95000, 663.6, 0.0 ! !END!
1875 ! X = 397.32100, 6954.33000, 638.8, 0.0 ! !END!
1876 ! X = 397.32200, 6954.19000, 649.2, 0.0 ! !END!
1877 ! X = 397.32600, 6954.08000, 659.3, 0.0 ! !END!
1878 ! X = 397.32700, 6957.28000, 681.6, 0.0 ! !END!
1879 ! X = 397.33100, 6954.44000, 626.5, 0.0 ! !END!
1880 ! X = 397.33200, 6954.42000, 626.5, 0.0 ! !END!
1881 ! X = 397.33200, 6954.39000, 628.7, 0.0 ! !END!
1882 ! X = 397.33300, 6957.40000, 678.1, 0.0 ! !END!
1883 ! X = 397.33500, 6957.11000, 664.0, 0.0 ! !END!
1884 ! X = 397.33600, 6954.14000, 654.4, 0.0 ! !END!
1885 ! X = 397.33700, 6954.26000, 647.7, 0.0 ! !END!
1886 ! X = 397.33700, 6955.06300, 629.3, 0.0 ! !END!
1887 ! X = 397.34000, 6954.02000, 659.7, 0.0 ! !END!
1888 ! X = 397.34100, 6953.95000, 664.1, 0.0 ! !END!
1889 ! X = 397.34200, 6957.35000, 678.3, 0.0 ! !END!
1890 ! X = 397.34300, 6954.19000, 649.4, 0.0 ! !END!
1891 ! X = 397.34500, 6954.34000, 636.3, 0.0 ! !END!
1892 ! X = 397.34700, 6957.08000, 661.2, 0.0 ! !END!
1893 ! X = 397.34900, 6954.07000, 659.5, 0.0 ! !END!
1894 ! X = 397.35300, 6957.21000, 678.5, 0.0 ! !END!
1895 ! X = 397.35300, 6954.98000, 620.8, 0.0 ! !END!
1896 ! X = 397.35300, 6954.38000, 629.6, 0.0 ! !END!
1897 ! X = 397.35400, 6954.25000, 647.0, 0.0 ! !END!
1898 ! X = 397.35600, 6957.38000, 676.6, 0.0 ! !END!
1899 ! X = 397.35700, 6954.07000, 659.6, 0.0 ! !END!
1900 ! X = 397.35700, 6954.14000, 654.5, 0.0 ! !END!
1901 ! X = 397.35900, 6954.34000, 635.6, 0.0 ! !END!
1902 ! X = 397.36000, 6957.04000, 660.6, 0.0 ! !END!
1903 ! X = 397.36000, 6957.27000, 680.7, 0.0 ! !END!
1904 ! X = 397.36100, 6953.94000, 665.0, 0.0 ! !END!
1905 ! X = 397.36100, 6954.02000, 661.3, 0.0 ! !END!
1906 ! X = 397.36400, 6954.19000, 649.6, 0.0 ! !END!
1907 ! X = 397.36400, 6955.04300, 625.7, 0.0 ! !END!
1908 ! X = 397.37000, 6954.30000, 641.8, 0.0 ! !END!
1909 ! X = 397.37100, 6957.34000, 676.9, 0.0 ! !END!
1910 ! X = 397.37400, 6954.13000, 655.4, 0.0 ! !END!
1911 ! X = 397.37500, 6954.24000, 647.2, 0.0 ! !END!
1912 ! X = 397.37900, 6954.31000, 639.7, 0.0 ! !END!
1913 ! X = 397.38100, 6954.02000, 662.7, 0.0 ! !END!
1914 ! X = 397.38400, 6954.56000, 611.8, 0.0 ! !END!
1915 ! X = 397.38500, 6953.94000, 666.0, 0.0 ! !END!
1916 ! X = 397.38600, 6957.21000, 674.1, 0.0 ! !END!
1917 ! X = 397.38700, 6957.28000, 676.0, 0.0 ! !END!
1918 ! X = 397.38800, 6954.07000, 660.0, 0.0 ! !END!
1919 ! X = 397.39000, 6954.42800, 625.4, 0.0 ! !END!
1920 ! X = 397.39000, 6954.15000, 653.7, 0.0 ! !END!
1921 ! X = 397.39300, 6954.17000, 651.2, 0.0 ! !END!
1922 ! X = 397.39300, 6957.36000, 673.9, 0.0 ! !END!
1923 ! X = 397.39500, 6954.13000, 655.7, 0.0 ! !END!
1924 ! X = 397.39600, 6955.01500, 613.6, 0.0 ! !END!
1925 ! X = 397.39600, 6954.19000, 649.0, 0.0 ! !END!
1926 ! X = 397.39600, 6954.24000, 646.3, 0.0 ! !END!
1927 ! X = 397.40100, 6954.39000, 626.8, 0.0 ! !END!
1928 ! X = 397.40200, 6956.97000, 652.4, 0.0 ! !END!
1929 ! X = 397.40200, 6957.17000, 668.8, 0.0 ! !END!
1930 ! X = 397.40300, 6957.00000, 654.7, 0.0 ! !END!
1931 ! X = 397.40300, 6957.14000, 666.4, 0.0 ! !END!
1932 ! X = 397.40500, 6953.94000, 667.1, 0.0 ! !END!
1933 ! X = 397.41000, 6954.37000, 628.0, 0.0 ! !END!
1934 ! X = 397.41000, 6957.03000, 656.0, 0.0 ! !END!
1935 ! X = 397.41100, 6957.11000, 661.8, 0.0 ! !END!
1936 ! X = 397.41200, 6956.94000, 646.2, 0.0 ! !END!

1937 ! X = 397.42000, 6957.30000, 671.2, 0.0 ! !END!
1938 ! X = 397.42300, 6957.27000, 671.0, 0.0 ! !END!
1939 ! X = 397.42700, 6954.35000, 630.7, 0.0 ! !END!
1940 ! X = 397.42800, 6953.94000, 668.7, 0.0 ! !END!
1941 ! X = 397.42900, 6954.34000, 633.0, 0.0 ! !END!
1942 ! X = 397.42900, 6957.25000, 668.7, 0.0 ! !END!
1943 ! X = 397.43000, 6956.91000, 640.4, 0.0 ! !END!
1944 ! X = 397.43000, 6957.40000, 667.1, 0.0 ! !END!
1945 ! X = 397.43300, 6954.02000, 667.1, 0.0 ! !END!
1946 ! X = 397.43300, 6954.01000, 667.2, 0.0 ! !END!
1947 ! X = 397.43600, 6957.08000, 657.8, 0.0 ! !END!
1948 ! X = 397.43600, 6957.22000, 667.6, 0.0 ! !END!
1949 ! X = 397.43800, 6954.31000, 635.4, 0.0 ! !END!
1950 ! X = 397.43800, 6954.05000, 667.3, 0.0 ! !END!
1951 ! X = 397.44100, 6954.30000, 636.0, 0.0 ! !END!
1952 ! X = 397.44100, 6954.07000, 665.7, 0.0 ! !END!
1953 ! X = 397.44300, 6957.20000, 666.5, 0.0 ! !END!
1954 ! X = 397.44400, 6954.28000, 636.9, 0.0 ! !END!
1955 ! X = 397.44400, 6954.26000, 637.7, 0.0 ! !END!
1956 ! X = 397.44400, 6954.24000, 640.7, 0.0 ! !END!
1957 ! X = 397.44400, 6954.23000, 641.4, 0.0 ! !END!
1958 ! X = 397.44600, 6953.94000, 670.6, 0.0 ! !END!
1959 ! X = 397.45000, 6954.13000, 659.3, 0.0 ! !END!
1960 ! X = 397.45000, 6957.18000, 664.1, 0.0 ! !END!
1961 ! X = 397.45000, 6957.38000, 664.1, 0.0 ! !END!
1962 ! X = 397.45300, 6954.16000, 652.4, 0.0 ! !END!
1963 ! X = 397.45300, 6957.15000, 661.9, 0.0 ! !END!
1964 ! X = 397.45600, 6954.18000, 648.7, 0.0 ! !END!
1965 ! X = 397.46400, 6956.91000, 639.3, 0.0 ! !END!
1966 ! X = 397.46400, 6954.01000, 670.1, 0.0 ! !END!
1967 ! X = 397.46500, 6957.12000, 658.9, 0.0 ! !END!
1968 ! X = 397.46800, 6957.36000, 663.5, 0.0 ! !END!
1969 ! X = 397.47100, 6953.94000, 671.8, 0.0 ! !END!
1970 ! X = 397.47100, 6954.05000, 671.9, 0.0 ! !END!
1971 ! X = 397.47900, 6957.33000, 665.1, 0.0 ! !END!
1972 ! X = 397.48400, 6954.00000, 673.0, 0.0 ! !END!
1973 ! X = 397.48400, 6957.04000, 653.4, 0.0 ! !END!
1974 ! X = 397.48600, 6957.02000, 652.8, 0.0 ! !END!
1975 ! X = 397.48900, 6956.99000, 649.6, 0.0 ! !END!
1976 ! X = 397.49000, 6953.94000, 672.5, 0.0 ! !END!
1977 ! X = 397.49100, 6954.05000, 673.8, 0.0 ! !END!
1978 ! X = 397.49200, 6957.43000, 656.9, 0.0 ! !END!
1979 ! X = 397.49400, 6954.14000, 659.1, 0.0 ! !END!
1980 ! X = 397.49400, 6957.29000, 665.2, 0.0 ! !END!
1981 ! X = 397.49700, 6956.89000, 631.3, 0.0 ! !END!
1982 ! X = 397.49700, 6957.07000, 653.8, 0.0 ! !END!
1983 ! X = 397.49900, 6957.27000, 665.0, 0.0 ! !END!
1984 ! X = 397.49900, 6957.40000, 658.6, 0.0 ! !END!
1985 ! X = 397.50300, 6954.00000, 673.6, 0.0 ! !END!
1986 ! X = 397.50600, 6957.24000, 665.2, 0.0 ! !END!
1987 ! X = 397.50800, 6956.97000, 646.8, 0.0 ! !END!
1988 ! X = 397.50800, 6957.36000, 660.8, 0.0 ! !END!
1989 ! X = 397.50900, 6953.93000, 673.2, 0.0 ! !END!
1990 ! X = 397.51000, 6957.44000, 656.8, 0.0 ! !END!
1991 ! X = 397.51200, 6954.05000, 674.9, 0.0 ! !END!
1992 ! X = 397.51300, 6957.22000, 664.6, 0.0 ! !END!
1993 ! X = 397.52000, 6957.10000, 653.7, 0.0 ! !END!
1994 ! X = 397.52000, 6957.20000, 662.7, 0.0 ! !END!
1995 ! X = 397.52300, 6956.83000, 629.9, 0.0 ! !END!
1996 ! X = 397.52300, 6956.94000, 639.1, 0.0 ! !END!
1997 ! X = 397.52500, 6954.00000, 674.2, 0.0 ! !END!
1998 ! X = 397.52900, 6957.17000, 659.1, 0.0 ! !END!
1999 ! X = 397.53300, 6953.93000, 674.3, 0.0 ! !END!
2000 ! X = 397.53300, 6954.04000, 674.6, 0.0 ! !END!
2001 ! X = 397.53400, 6957.37000, 655.7, 0.0 ! !END!
2002 ! X = 397.53500, 6957.29000, 664.0, 0.0 ! !END!
2003 ! X = 397.53600, 6954.14000, 659.7, 0.0 ! !END!
2004 ! X = 397.53900, 6957.06000, 653.8, 0.0 ! !END!
2005 ! X = 397.54000, 6956.90000, 633.3, 0.0 ! !END!
2006 ! X = 397.54300, 6956.79000, 623.4, 0.0 ! !END!
2007 ! X = 397.54700, 6953.99000, 674.1, 0.0 ! !END!

2008 ! X = 397.54800, 6957.03000, 652.9, 0.0 ! !END!
2009 ! X = 397.54900, 6957.15000, 654.7, 0.0 ! !END!
2010 ! X = 397.55400, 6954.04000, 673.6, 0.0 ! !END!
2011 ! X = 397.55500, 6953.92000, 674.4, 0.0 ! !END!
2012 ! X = 397.55500, 6953.92000, 674.4, 0.0 ! !END!
2013 ! X = 397.55900, 6957.01000, 649.5, 0.0 ! !END!
2014 ! X = 397.56200, 6956.86000, 630.2, 0.0 ! !END!
2015 ! X = 397.56300, 6957.29000, 659.3, 0.0 ! !END!
2016 ! X = 397.56700, 6956.77000, 617.8, 0.0 ! !END!
2017 ! X = 397.56700, 6957.37000, 652.9, 0.0 ! !END!
2018 ! X = 397.56700, 6957.41000, 651.9, 0.0 ! !END!
2019 ! X = 397.56800, 6953.99000, 674.1, 0.0 ! !END!
2020 ! X = 397.56900, 6957.12000, 652.3, 0.0 ! !END!
2021 ! X = 397.57100, 6957.22000, 659.3, 0.0 ! !END!
2022 ! X = 397.57200, 6956.98000, 644.6, 0.0 ! !END!
2023 ! X = 397.57500, 6954.04000, 672.9, 0.0 ! !END!
2024 ! X = 397.57600, 6953.92000, 674.4, 0.0 ! !END!
2025 ! X = 397.57900, 6954.13000, 661.4, 0.0 ! !END!
2026 ! X = 397.58500, 6956.95000, 639.5, 0.0 ! !END!
2027 ! X = 397.58900, 6953.99000, 672.6, 0.0 ! !END!
2028 ! X = 397.59100, 6957.17000, 653.7, 0.0 ! !END!
2029 ! X = 397.59200, 6956.70000, 597.9, 0.0 ! !END!
2030 ! X = 397.59200, 6956.74500, 610.7, 0.0 ! !END!
2031 ! X = 397.59300, 6957.30000, 652.9, 0.0 ! !END!
2032 ! X = 397.59500, 6957.38000, 647.1, 0.0 ! !END!
2033 ! X = 397.59700, 6953.92000, 674.0, 0.0 ! !END!
2034 ! X = 397.60100, 6956.84000, 626.6, 0.0 ! !END!
2035 ! X = 397.60300, 6957.24000, 654.0, 0.0 ! !END!
2036 ! X = 397.60600, 6954.03000, 672.1, 0.0 ! !END!
2037 ! X = 397.60600, 6957.14000, 649.5, 0.0 ! !END!
2038 ! X = 397.61000, 6956.93000, 634.0, 0.0 ! !END!
2039 ! X = 397.61000, 6953.98000, 672.6, 0.0 ! !END!
2040 ! X = 397.61000, 6954.13000, 662.0, 0.0 ! !END!
2041 ! X = 397.61100, 6957.09000, 646.2, 0.0 ! !END!
2042 ! X = 397.61800, 6954.02000, 672.1, 0.0 ! !END!
2043 ! X = 397.61800, 6953.91000, 674.0, 0.0 ! !END!
2044 ! X = 397.61800, 6957.39000, 642.5, 0.0 ! !END!
2045 ! X = 397.61800, 6956.67800, 598.0, 0.0 ! !END!
2046 ! X = 397.62200, 6957.30000, 646.1, 0.0 ! !END!
2047 ! X = 397.62300, 6957.06000, 644.2, 0.0 ! !END!
2048 ! X = 397.62700, 6956.90500, 632.9, 0.0 ! !END!
2049 ! X = 397.63000, 6953.98000, 673.3, 0.0 ! !END!
2050 ! X = 397.63000, 6956.73600, 607.3, 0.0 ! !END!
2051 ! X = 397.63100, 6954.13000, 662.4, 0.0 ! !END!
2052 ! X = 397.63700, 6954.03000, 672.8, 0.0 ! !END!
2053 ! X = 397.63900, 6953.91000, 674.6, 0.0 ! !END!
2054 ! X = 397.63900, 6957.04000, 639.2, 0.0 ! !END!
2055 ! X = 397.64100, 6956.88000, 631.8, 0.0 ! !END!
2056 ! X = 397.64400, 6957.39000, 632.7, 0.0 ! !END!
2057 ! X = 397.64500, 6954.46000, 611.8, 0.0 ! !END!
2058 ! X = 397.64700, 6956.63700, 592.6, 0.0 ! !END!
2059 ! X = 397.64800, 6957.30000, 641.6, 0.0 ! !END!
2060 ! X = 397.65000, 6956.77000, 615.3, 0.0 ! !END!
2061 ! X = 397.65100, 6953.98000, 674.9, 0.0 ! !END!
2062 ! X = 397.65200, 6957.09000, 640.8, 0.0 ! !END!
2063 ! X = 397.65200, 6956.85000, 627.6, 0.0 ! !END!
2064 ! X = 397.65200, 6957.02000, 637.8, 0.0 ! !END!
2065 ! X = 397.65500, 6957.23000, 640.8, 0.0 ! !END!
2066 ! X = 397.65500, 6956.69600, 602.3, 0.0 ! !END!
2067 ! X = 397.65800, 6954.03000, 672.9, 0.0 ! !END!
2068 ! X = 397.65900, 6953.84000, 673.9, 0.0 ! !END!
2069 ! X = 397.65900, 6953.91000, 674.7, 0.0 ! !END!
2070 ! X = 397.66200, 6956.81700, 626.2, 0.0 ! !END!
2071 ! X = 397.66200, 6954.13000, 663.8, 0.0 ! !END!
2072 ! X = 397.66300, 6956.99000, 634.2, 0.0 ! !END!
2073 ! X = 397.67200, 6953.98000, 674.9, 0.0 ! !END!
2074 ! X = 397.67300, 6956.92500, 631.7, 0.0 ! !END!
2075 ! X = 397.67300, 6957.30000, 637.1, 0.0 ! !END!
2076 ! X = 397.67400, 6956.71900, 603.7, 0.0 ! !END!
2077 ! X = 397.67800, 6953.91000, 675.5, 0.0 ! !END!
2078 ! X = 397.67900, 6957.38000, 628.3, 0.0 ! !END!

2079 ! X = 397.68000, 6957.20000, 638.3, 0.0 ! !END!
2080 ! X = 397.68500, 6957.11000, 636.2, 0.0 ! !END!
2081 ! X = 397.68600, 6956.98000, 633.0, 0.0 ! !END!
2082 ! X = 397.68800, 6957.40000, 624.1, 0.0 ! !END!
2083 ! X = 397.68900, 6954.02000, 673.5, 0.0 ! !END!
2084 ! X = 397.69000, 6956.90000, 631.1, 0.0 ! !END!
2085 ! X = 397.69000, 6956.74100, 607.2, 0.0 ! !END!
2086 ! X = 397.69100, 6957.17000, 638.2, 0.0 ! !END!
2087 ! X = 397.69200, 6953.97000, 674.9, 0.0 ! !END!
2088 ! X = 397.69500, 6957.14000, 636.5, 0.0 ! !END!
2089 ! X = 397.69500, 6956.75800, 614.2, 0.0 ! !END!
2090 ! X = 397.69700, 6957.30000, 635.7, 0.0 ! !END!
2091 ! X = 397.69800, 6953.90000, 675.5, 0.0 ! !END!
2092 ! X = 397.70400, 6954.12000, 667.5, 0.0 ! !END!
2093 ! X = 397.70500, 6956.78700, 621.7, 0.0 ! !END!
2094 ! X = 397.71000, 6956.99000, 632.7, 0.0 ! !END!
2095 ! X = 397.71200, 6957.31300, 634.6, 0.0 ! !END!
2096 ! X = 397.71300, 6953.97000, 674.9, 0.0 ! !END!
2097 ! X = 397.72000, 6954.02000, 673.8, 0.0 ! !END!
2098 ! X = 397.72100, 6953.90000, 675.3, 0.0 ! !END!
2099 ! X = 397.72200, 6956.81000, 628.5, 0.0 ! !END!
2100 ! X = 397.72400, 6957.38000, 620.3, 0.0 ! !END!
2101 ! X = 397.72600, 6956.84000, 631.8, 0.0 ! !END!
2102 ! X = 397.72800, 6956.90000, 628.3, 0.0 ! !END!
2103 ! X = 397.73100, 6953.96000, 675.6, 0.0 ! !END!
2104 ! X = 397.73900, 6954.08000, 673.3, 0.0 ! !END!
2105 ! X = 397.73900, 6953.67000, 666.9, 0.0 ! !END!
2106 ! X = 397.74000, 6956.93600, 624.1, 0.0 ! !END!
2107 ! X = 397.74100, 6954.01000, 674.7, 0.0 ! !END!
2108 ! X = 397.74100, 6957.29300, 632.3, 0.0 ! !END!
2109 ! X = 397.74200, 6953.90000, 675.9, 0.0 ! !END!
2110 ! X = 397.75000, 6957.37000, 619.3, 0.0 ! !END!
2111 ! X = 397.75100, 6956.85400, 630.0, 0.0 ! !END!
2112 ! X = 397.75400, 6953.96000, 675.9, 0.0 ! !END!
2113 ! X = 397.76100, 6954.01000, 675.1, 0.0 ! !END!
2114 ! X = 397.76200, 6957.01000, 627.1, 0.0 ! !END!
2115 ! X = 397.76500, 6956.87400, 625.3, 0.0 ! !END!
2116 ! X = 397.77100, 6957.28100, 628.0, 0.0 ! !END!
2117 ! X = 397.77500, 6953.90000, 676.0, 0.0 ! !END!
2118 ! X = 397.77500, 6953.96000, 676.3, 0.0 ! !END!
2119 ! X = 397.77700, 6957.36000, 617.2, 0.0 ! !END!
2120 ! X = 397.78200, 6954.01000, 674.2, 0.0 ! !END!
2121 ! X = 397.78300, 6956.90000, 618.1, 0.0 ! !END!
2122 ! X = 397.78600, 6954.07000, 672.1, 0.0 ! !END!
2123 ! X = 397.79600, 6957.29000, 620.9, 0.0 ! !END!
2124 ! X = 397.80300, 6954.01000, 674.8, 0.0 ! !END!
2125 ! X = 397.80300, 6957.32000, 616.0, 0.0 ! !END!
2126 ! X = 397.80600, 6953.96000, 677.0, 0.0 ! !END!
2127 ! X = 397.80800, 6957.35000, 613.3, 0.0 ! !END!
2128 ! X = 397.81700, 6953.89000, 677.1, 0.0 ! !END!
2129 ! X = 397.82200, 6954.06000, 673.4, 0.0 ! !END!
2130 ! X = 397.82400, 6954.00000, 676.4, 0.0 ! !END!
2131 ! X = 397.84600, 6957.31000, 605.4, 0.0 ! !END!
2132 ! X = 397.84700, 6953.95000, 678.2, 0.0 ! !END!
2133 ! X = 397.85200, 6953.88000, 679.3, 0.0 ! !END!
2134 ! X = 397.85400, 6954.00000, 677.4, 0.0 ! !END!
2135 ! X = 397.86400, 6954.06000, 676.7, 0.0 ! !END!
2136 ! X = 397.86900, 6954.14300, 668.0, 0.0 ! !END!
2137 ! X = 397.88000, 6953.95000, 678.8, 0.0 ! !END!
2138 ! X = 397.89100, 6956.07000, 469.2, 0.0 ! !END!
2139 ! X = 397.90200, 6953.88000, 680.7, 0.0 ! !END!
2140 ! X = 397.90500, 6953.51000, 679.7, 0.0 ! !END!
2141 ! X = 397.90500, 6953.99000, 678.5, 0.0 ! !END!
2142 ! X = 397.90800, 6953.53000, 678.7, 0.0 ! !END!
2143 ! X = 397.90800, 6954.14000, 669.5, 0.0 ! !END!
2144 ! X = 397.91000, 6953.94000, 679.3, 0.0 ! !END!
2145 ! X = 397.91100, 6953.55000, 677.9, 0.0 ! !END!
2146 ! X = 397.91600, 6953.58000, 676.9, 0.0 ! !END!
2147 ! X = 397.91900, 6953.60000, 677.3, 0.0 ! !END!
2148 ! X = 397.92100, 6953.64000, 678.2, 0.0 ! !END!
2149 ! X = 397.92100, 6954.09000, 678.2, 0.0 ! !END!

2150 ! X = 397.92400, 6953.62000, 678.0, 0.0 ! !END!
2151 ! X = 397.92500, 6954.05000, 679.8, 0.0 ! !END!
2152 ! X = 397.92800, 6953.66000, 678.2, 0.0 ! !END!
2153 ! X = 397.93000, 6953.68000, 678.0, 0.0 ! !END!
2154 ! X = 397.93300, 6953.70000, 677.6, 0.0 ! !END!
2155 ! X = 397.93400, 6953.72000, 677.4, 0.0 ! !END!
2156 ! X = 397.93500, 6953.74000, 677.5, 0.0 ! !END!
2157 ! X = 397.93500, 6953.76000, 678.5, 0.0 ! !END!
2158 ! X = 397.94000, 6953.81000, 680.1, 0.0 ! !END!
2159 ! X = 397.94300, 6953.78000, 679.0, 0.0 ! !END!
2160 ! X = 397.94400, 6953.50000, 680.6, 0.0 ! !END!
2161 ! X = 397.94700, 6953.52000, 679.7, 0.0 ! !END!
2162 ! X = 397.94700, 6953.86000, 680.8, 0.0 ! !END!
2163 ! X = 397.94900, 6953.54000, 679.0, 0.0 ! !END!
2164 ! X = 397.95100, 6953.51000, 680.1, 0.0 ! !END!
2165 ! X = 397.95500, 6953.57000, 678.2, 0.0 ! !END!
2166 ! X = 397.95700, 6953.76000, 678.2, 0.0 ! !END!
2167 ! X = 397.95800, 6953.59000, 677.9, 0.0 ! !END!
2168 ! X = 397.95900, 6953.91000, 678.8, 0.0 ! !END!
2169 ! X = 397.96000, 6953.89000, 679.6, 0.0 ! !END!
2170 ! X = 397.96100, 6953.61000, 677.8, 0.0 ! !END!
2171 ! X = 397.96300, 6953.74000, 677.2, 0.0 ! !END!
2172 ! X = 397.96500, 6953.65000, 677.7, 0.0 ! !END!
2173 ! X = 397.96600, 6953.86000, 680.0, 0.0 ! !END!
2174 ! X = 397.96700, 6953.63000, 678.2, 0.0 ! !END!
2175 ! X = 397.96800, 6953.72000, 677.0, 0.0 ! !END!
2176 ! X = 397.97000, 6953.68000, 677.8, 0.0 ! !END!
2177 ! X = 397.97100, 6953.97000, 676.9, 0.0 ! !END!
2178 ! X = 397.97500, 6953.70000, 677.7, 0.0 ! !END!
2179 ! X = 397.97600, 6953.92400, 677.7, 0.0 ! !END!
2180 ! X = 397.97900, 6953.81000, 679.2, 0.0 ! !END!
2181 ! X = 397.97900, 6953.97000, 676.6, 0.0 ! !END!
2182 ! X = 397.98100, 6953.80000, 678.9, 0.0 ! !END!
2183 ! X = 397.98500, 6953.87000, 678.8, 0.0 ! !END!
2184 ! X = 397.98600, 6954.05100, 675.7, 0.0 ! !END!
2185 ! X = 397.99000, 6953.78000, 677.9, 0.0 ! !END!
2186 ! X = 397.99300, 6953.51000, 680.5, 0.0 ! !END!
2187 ! X = 397.99800, 6953.77000, 677.5, 0.0 ! !END!
2188 ! X = 397.99900, 6953.97000, 675.6, 0.0 ! !END!
2189 ! X = 397.99900, 6953.92200, 676.9, 0.0 ! !END!
2190 ! X = 398.00100, 6953.88000, 677.8, 0.0 ! !END!
2191 ! X = 398.00200, 6953.53000, 679.9, 0.0 ! !END!
2192 ! X = 398.00300, 6953.83000, 678.4, 0.0 ! !END!
2193 ! X = 398.00600, 6953.75000, 676.5, 0.0 ! !END!
2194 ! X = 398.00700, 6953.57000, 678.5, 0.0 ! !END!
2195 ! X = 398.00700, 6953.83000, 678.2, 0.0 ! !END!
2196 ! X = 398.01000, 6953.59000, 678.0, 0.0 ! !END!
2197 ! X = 398.01300, 6953.60000, 677.7, 0.0 ! !END!
2198 ! X = 398.01300, 6953.73000, 676.9, 0.0 ! !END!
2199 ! X = 398.01600, 6953.62000, 677.3, 0.0 ! !END!
2200 ! X = 398.01800, 6953.51000, 680.3, 0.0 ! !END!
2201 ! X = 398.01900, 6953.80000, 677.4, 0.0 ! !END!
2202 ! X = 398.02000, 6953.71000, 676.5, 0.0 ! !END!
2203 ! X = 398.02100, 6953.65000, 676.3, 0.0 ! !END!
2204 ! X = 398.02100, 6953.67000, 676.3, 0.0 ! !END!
2205 ! X = 398.02100, 6953.91000, 675.8, 0.0 ! !END!
2206 ! X = 398.02200, 6953.69000, 676.3, 0.0 ! !END!
2207 ! X = 398.02600, 6953.78000, 676.1, 0.0 ! !END!
2208 ! X = 398.02600, 6953.88000, 676.1, 0.0 ! !END!
2209 ! X = 398.02800, 6953.97000, 671.1, 0.0 ! !END!
2210 ! X = 398.03400, 6953.76000, 675.5, 0.0 ! !END!
2211 ! X = 398.03600, 6953.52000, 680.5, 0.0 ! !END!
2212 ! X = 398.04000, 6953.91000, 675.1, 0.0 ! !END!
2213 ! X = 398.04100, 6953.74000, 674.8, 0.0 ! !END!
2214 ! X = 398.04200, 6953.87000, 675.5, 0.0 ! !END!
2215 ! X = 398.04500, 6953.56000, 676.9, 0.0 ! !END!
2216 ! X = 398.04700, 6953.85000, 675.4, 0.0 ! !END!
2217 ! X = 398.04800, 6953.58000, 676.0, 0.0 ! !END!
2218 ! X = 398.04900, 6953.72000, 675.7, 0.0 ! !END!
2219 ! X = 398.05000, 6953.51000, 680.9, 0.0 ! !END!
2220 ! X = 398.05000, 6953.59000, 676.5, 0.0 ! !END!

2221 ! X = 398.05300, 6953.61000, 675.6, 0.0 ! !END!
2222 ! X = 398.05400, 6953.70000, 675.1, 0.0 ! !END!
2223 ! X = 398.05500, 6953.63000, 674.9, 0.0 ! !END!
2224 ! X = 398.05600, 6954.01000, 666.9, 0.0 ! !END!
2225 ! X = 398.05700, 6953.82000, 675.3, 0.0 ! !END!
2226 ! X = 398.05800, 6953.65000, 674.5, 0.0 ! !END!
2227 ! X = 398.06000, 6953.68000, 674.5, 0.0 ! !END!
2228 ! X = 398.06000, 6953.91000, 674.5, 0.0 ! !END!
2229 ! X = 398.06400, 6953.66000, 674.1, 0.0 ! !END!
2230 ! X = 398.06500, 6953.89000, 674.8, 0.0 ! !END!
2231 ! X = 398.06900, 6953.96000, 670.7, 0.0 ! !END!
2232 ! X = 398.07300, 6953.87000, 674.9, 0.0 ! !END!
2233 ! X = 398.07400, 6953.78000, 674.6, 0.0 ! !END!
2234 ! X = 398.08000, 6953.77000, 674.4, 0.0 ! !END!
2235 ! X = 398.08000, 6953.85000, 674.4, 0.0 ! !END!
2236 ! X = 398.08100, 6953.81000, 674.7, 0.0 ! !END!
2237 ! X = 398.08500, 6953.95000, 671.3, 0.0 ! !END!
2238 ! X = 398.08700, 6953.75000, 673.8, 0.0 ! !END!
2239 ! X = 398.08700, 6953.83000, 674.4, 0.0 ! !END!
2240 ! X = 398.09400, 6953.57000, 675.3, 0.0 ! !END!
2241 ! X = 398.09500, 6953.53000, 678.9, 0.0 ! !END!
2242 ! X = 398.09600, 6953.73000, 673.3, 0.0 ! !END!
2243 ! X = 398.09700, 6953.81000, 674.6, 0.0 ! !END!
2244 ! X = 398.10000, 6954.02000, 663.5, 0.0 ! !END!
2245 ! X = 398.10200, 6953.80000, 674.5, 0.0 ! !END!
2246 ! X = 398.10300, 6953.71000, 672.8, 0.0 ! !END!
2247 ! X = 398.10700, 6953.59000, 673.9, 0.0 ! !END!
2248 ! X = 398.10800, 6953.54000, 678.2, 0.0 ! !END!
2249 ! X = 398.10900, 6953.61000, 672.9, 0.0 ! !END!
2250 ! X = 398.10900, 6953.78000, 674.1, 0.0 ! !END!
2251 ! X = 398.11000, 6953.63000, 672.6, 0.0 ! !END!
2252 ! X = 398.11000, 6953.69000, 672.6, 0.0 ! !END!
2253 ! X = 398.11200, 6953.65000, 672.5, 0.0 ! !END!
2254 ! X = 398.11400, 6953.67000, 672.5, 0.0 ! !END!
2255 ! X = 398.11600, 6953.76000, 673.7, 0.0 ! !END!
2256 ! X = 398.11800, 6953.89000, 674.0, 0.0 ! !END!
2257 ! X = 398.12200, 6953.55000, 675.7, 0.0 ! !END!
2258 ! X = 398.12500, 6953.95000, 668.1, 0.0 ! !END!
2259 ! X = 398.12500, 6953.74000, 671.4, 0.0 ! !END!
2260 ! X = 398.13300, 6953.72000, 671.3, 0.0 ! !END!
2261 ! X = 398.13500, 6953.56000, 674.4, 0.0 ! !END!
2262 ! X = 398.13800, 6953.85000, 674.7, 0.0 ! !END!
2263 ! X = 398.14000, 6953.70000, 671.5, 0.0 ! !END!
2264 ! X = 398.14000, 6953.90000, 672.3, 0.0 ! !END!
2265 ! X = 398.14500, 6953.83000, 674.2, 0.0 ! !END!
2266 ! X = 398.14500, 6953.68000, 672.3, 0.0 ! !END!
2267 ! X = 398.14900, 6953.57000, 673.5, 0.0 ! !END!
2268 ! X = 398.14900, 6953.66000, 672.4, 0.0 ! !END!
2269 ! X = 398.15300, 6953.64000, 672.3, 0.0 ! !END!
2270 ! X = 398.15600, 6953.80000, 672.4, 0.0 ! !END!
2271 ! X = 398.15800, 6953.61000, 672.1, 0.0 ! !END!
2272 ! X = 398.16000, 6953.51000, 677.8, 0.0 ! !END!
2273 ! X = 398.16100, 6953.86000, 673.7, 0.0 ! !END!
2274 ! X = 398.16200, 6953.58000, 672.6, 0.0 ! !END!
2275 ! X = 398.16400, 6953.51000, 677.5, 0.0 ! !END!
2276 ! X = 398.16600, 6953.90000, 670.7, 0.0 ! !END!
2277 ! X = 398.16900, 6953.77000, 670.5, 0.0 ! !END!
2278 ! X = 398.17700, 6953.52000, 675.8, 0.0 ! !END!
2279 ! X = 398.17700, 6953.60000, 671.4, 0.0 ! !END!
2280 ! X = 398.17800, 6953.87000, 670.9, 0.0 ! !END!
2281 ! X = 398.18100, 6953.72000, 669.2, 0.0 ! !END!
2282 ! X = 398.18200, 6953.82000, 670.5, 0.0 ! !END!
2283 ! X = 398.18600, 6953.58000, 671.6, 0.0 ! !END!
2284 ! X = 398.19200, 6953.78000, 668.3, 0.0 ! !END!
2285 ! X = 398.19700, 6953.54000, 673.1, 0.0 ! !END!
2286 ! X = 398.19700, 6953.69000, 668.6, 0.0 ! !END!
2287 ! X = 398.20000, 6953.51000, 675.4, 0.0 ! !END!
2288 ! X = 398.20300, 6953.75000, 667.7, 0.0 ! !END!
2289 ! X = 398.20600, 6953.51000, 674.9, 0.0 ! !END!
2290 ! X = 398.21700, 6953.71000, 666.6, 0.0 ! !END!
2291 ! X = 398.21800, 6953.96000, 660.1, 0.0 ! !END!

2292 ! X =	398.70800,	6956.21500,	430.2,	0.0 !	!END!
2293 ! X =	398.74000,	6955.95800,	419.9,	0.0 !	!END!
2294 ! X =	398.84400,	6953.59000,	600.1,	0.0 !	!END!
2295 ! X =	398.85400,	6953.62000,	592.5,	0.0 !	!END!
2296 ! X =	399.15300,	6956.30000,	367.2,	0.0 !	!END!
2297 ! X =	399.37300,	6956.25700,	364.0,	0.0 !	!END!
2298 ! X =	399.50200,	6956.96000,	373.2,	0.0 !	!END!
2299 ! X =	399.66000,	6955.88200,	331.6,	0.0 !	!END!
2300 ! X =	400.18300,	6955.34100,	314.9,	0.0 !	!END!
2301 ! X =	400.61900,	6953.88700,	378.6,	0.0 !	!END!
2302 ! X =	401.18100,	6954.22600,	317.3,	0.0 !	!END!
2303 ! X =	401.22900,	6954.24800,	314.8,	0.0 !	!END!
2304 ! X =	401.31400,	6956.78000,	438.6,	0.0 !	!END!
2305 ! X =	401.37000,	6954.66700,	306.0,	0.0 !	!END!
2306 ! X =	401.48700,	6955.34900,	279.2,	0.0 !	!END!
2307 ! X =	401.49500,	6956.71000,	436.6,	0.0 !	!END!
2308 ! X =	401.56500,	6954.30900,	305.3,	0.0 !	!END!
2309 ! X =	401.59600,	6954.74900,	290.4,	0.0 !	!END!
2310 ! X =	401.63500,	6954.82700,	285.1,	0.0 !	!END!
2311 ! X =	401.64300,	6954.39900,	296.7,	0.0 !	!END!
2312 ! X =	401.75000,	6954.47800,	295.5,	0.0 !	!END!
2313 ! X =	401.77400,	6954.56400,	291.6,	0.0 !	!END!
2314 ! X =	401.81500,	6954.56800,	290.7,	0.0 !	!END!
2315 ! X =	401.82800,	6954.09000,	293.6,	0.0 !	!END!
2316 ! X =	401.83100,	6954.62800,	290.8,	0.0 !	!END!
2317 ! X =	401.88500,	6954.08500,	295.7,	0.0 !	!END!
2318 ! X =	402.13200,	6953.98600,	299.4,	0.0 !	!END!
2319 ! X =	402.36000,	6954.16000,	288.0,	0.0 !	!END!
2320 ! X =	402.39600,	6957.00000,	300.1,	0.0 !	!END!
2321 ! X =	402.50500,	6956.90000,	293.9,	0.0 !	!END!
2322 ! X =	402.52800,	6954.53700,	272.5,	0.0 !	!END!
2323 ! X =	402.60000,	6956.24000,	345.2,	0.0 !	!END!
2324 ! X =	402.64400,	6958.45900,	424.8,	0.0 !	!END!
2325 ! X =	402.66000,	6958.40200,	418.0,	0.0 !	!END!
2326 ! X =	402.83600,	6958.37700,	407.8,	0.0 !	!END!
2327 ! X =	402.86100,	6955.13300,	280.0,	0.0 !	!END!
2328 ! X =	402.98100,	6958.39200,	397.6,	0.0 !	!END!
2329 ! X =	402.99100,	6958.46200,	400.0,	0.0 !	!END!
2330 ! X =	403.01600,	6958.71200,	429.4,	0.0 !	!END!
2331 ! X =	403.03300,	6958.36000,	387.7,	0.0 !	!END!
2332 ! X =	403.16800,	6958.68700,	398.6,	0.0 !	!END!
2333 ! X =	403.20800,	6954.42000,	261.2,	0.0 !	!END!
2334 ! X =	403.22500,	6957.04500,	264.8,	0.0 !	!END!
2335 ! X =	403.45200,	6958.83700,	390.8,	0.0 !	!END!
2336 ! X =	403.48400,	6955.47400,	284.7,	0.0 !	!END!
2337 ! X =	403.50900,	6957.02900,	259.4,	0.0 !	!END!
2338 ! X =	403.69100,	6956.62200,	253.3,	0.0 !	!END!
2339 ! X =	403.74400,	6955.20000,	280.5,	0.0 !	!END!
2340 ! X =	403.76000,	6955.94300,	265.3,	0.0 !	!END!
2341 ! X =	403.88800,	6954.66000,	234.2,	0.0 !	!END!
2342 ! X =	403.88800,	6954.66000,	234.2,	0.0 !	!END!
2343 ! X =	403.90700,	6955.12000,	278.2,	0.0 !	!END!
2344 ! X =	403.91200,	6956.66000,	263.4,	0.0 !	!END!
2345 ! X =	403.95400,	6956.44000,	261.4,	0.0 !	!END!
2346 ! X =	404.01000,	6956.88100,	279.1,	0.0 !	!END!
2347 ! X =	404.09700,	6955.98800,	239.5,	0.0 !	!END!
2348 ! X =	404.45300,	6955.79800,	232.4,	0.0 !	!END!
2349 ! X =	404.60800,	6957.53000,	311.3,	0.0 !	!END!
2350 ! X =	404.65800,	6956.81200,	347.4,	0.0 !	!END!
2351 ! X =	404.68000,	6955.11300,	228.2,	0.0 !	!END!
2352 ! X =	404.93100,	6954.80000,	226.7,	0.0 !	!END!
2353 ! X =	404.99100,	6955.37800,	252.0,	0.0 !	!END!
2354 ! X =	405.02300,	6955.23400,	235.7,	0.0 !	!END!
2355 ! X =	405.06200,	6955.20100,	232.5,	0.0 !	!END!
2356 ! X =	405.09400,	6957.42900,	247.2,	0.0 !	!END!
2357 ! X =	405.12600,	6957.39500,	246.3,	0.0 !	!END!
2358 ! X =	405.18700,	6957.74000,	259.5,	0.0 !	!END!
2359 ! X =	405.26800,	6954.70500,	236.2,	0.0 !	!END!
2360 ! X =	405.28700,	6954.77300,	228.7,	0.0 !	!END!
2361 ! X =	405.41600,	6955.22000,	219.9,	0.0 !	!END!
2362 ! X =	405.47200,	6954.55200,	245.2,	0.0 !	!END!

2363 ! X = 405.63400, 6955.50000, 222.7, 0.0 ! !END!
2364 ! X = 405.63700, 6954.95000, 220.4, 0.0 ! !END!
2365 ! X = 405.76800, 6954.71000, 230.8, 0.0 ! !END!
2366 ! X = 405.90400, 6957.47000, 249.2, 0.0 ! !END!
2367 ! X = 405.93000, 6954.40000, 246.4, 0.0 ! !END!
2368 ! X = 405.98400, 6955.24500, 211.3, 0.0 ! !END!
2369 ! X = 406.16000, 6958.09000, 245.0, 0.0 ! !END!
2370 ! X = 406.17300, 6954.34000, 237.2, 0.0 ! !END!
2371 ! X = 406.17600, 6958.70000, 233.4, 0.0 ! !END!
2372 ! X = 406.24900, 6954.41200, 227.7, 0.0 ! !END!
2373 ! X = 406.27800, 6954.87100, 210.0, 0.0 ! !END!
2374 ! X = 406.30600, 6958.02000, 231.9, 0.0 ! !END!
2375 ! X = 406.37500, 6954.31800, 233.1, 0.0 ! !END!
2376 ! X = 406.43500, 6954.36600, 225.1, 0.0 ! !END!
2377 ! X = 406.52400, 6954.42000, 220.1, 0.0 ! !END!
2378 ! X = 406.54700, 6953.75000, 202.1, 0.0 ! !END!
2379 ! X = 406.55800, 6953.60000, 197.8, 0.0 ! !END!
2380 ! X = 406.60900, 6954.43100, 216.3, 0.0 ! !END!
2381 ! X = 406.67500, 6954.52100, 209.2, 0.0 ! !END!
2382 ! X = 406.68100, 6953.66000, 195.9, 0.0 ! !END!
2383 ! X = 406.70300, 6954.89500, 201.1, 0.0 ! !END!
2384 ! X = 406.70500, 6953.69000, 195.8, 0.0 ! !END!
2385 ! X = 406.72400, 6953.85000, 194.1, 0.0 ! !END!
2386 ! X = 406.76900, 6954.27000, 215.7, 0.0 ! !END!
2387 ! X = 406.78900, 6954.93300, 199.2, 0.0 ! !END!
2388 ! X = 406.81800, 6953.55000, 197.1, 0.0 ! !END!
2389 ! X = 406.84600, 6954.28600, 210.3, 0.0 ! !END!
2390 ! X = 406.87000, 6953.73000, 193.5, 0.0 ! !END!
2391 ! X = 406.88000, 6954.06000, 197.8, 0.0 ! !END!
2392 ! X = 406.89200, 6954.29800, 209.8, 0.0 ! !END!
2393 ! X = 406.94200, 6953.81000, 193.5, 0.0 ! !END!
2394 ! X = 406.98200, 6954.39900, 203.0, 0.0 ! !END!
2395 ! X = 406.99700, 6954.12000, 198.1, 0.0 ! !END!
2396 ! X = 407.00600, 6953.50000, 195.3, 0.0 ! !END!
2397 ! X = 407.05300, 6953.77000, 191.2, 0.0 ! !END!
2398 ! X = 407.05800, 6954.27600, 200.0, 0.0 ! !END!
2399 ! X = 407.07300, 6954.40900, 200.3, 0.0 ! !END!
2400 ! X = 407.12800, 6953.74000, 190.3, 0.0 ! !END!
2401 ! X = 407.15600, 6954.65800, 198.0, 0.0 ! !END!
2402 ! X = 407.17100, 6954.39900, 199.1, 0.0 ! !END!
2403 ! X = 407.23500, 6954.08000, 193.9, 0.0 ! !END!
2404 ! X = 407.23700, 6954.33100, 198.5, 0.0 ! !END!
2405 ! X = 407.27000, 6954.63400, 194.3, 0.0 ! !END!
2406 ! X = 407.27500, 6954.38900, 196.9, 0.0 ! !END!
2407 ! X = 407.33200, 6953.59000, 190.8, 0.0 ! !END!
2408 ! X = 407.36000, 6954.26100, 200.2, 0.0 ! !END!
2409 ! X = 407.38200, 6954.37900, 196.4, 0.0 ! !END!
2410 ! X = 407.43100, 6954.34800, 195.7, 0.0 ! !END!
2411 ! X = 407.43800, 6954.08000, 196.8, 0.0 ! !END!
2412 ! X = 407.46900, 6954.32200, 195.7, 0.0 ! !END!
2413 ! X = 407.49400, 6953.91000, 193.0, 0.0 ! !END!
2414 ! X = 407.49500, 6953.70000, 188.0, 0.0 ! !END!
2415 ! X = 407.49900, 6954.28900, 196.3, 0.0 ! !END!
2416 ! X = 407.50400, 6954.18000, 196.4, 0.0 ! !END!
2417 ! X = 407.51200, 6954.09000, 197.5, 0.0 ! !END!
2418 ! X = 407.53800, 6954.24900, 196.6, 0.0 ! !END!
2419 ! X = 407.57000, 6953.62000, 187.2, 0.0 ! !END!
2420 ! X = 407.58300, 6954.11700, 194.4, 0.0 ! !END!
2421 ! X = 407.60600, 6954.63000, 189.1, 0.0 ! !END!
2422 ! X = 407.66600, 6957.00000, 201.0, 0.0 ! !END!
2423 ! X = 407.74800, 6954.67800, 188.2, 0.0 ! !END!
2424 ! X = 407.84300, 6954.22000, 182.5, 0.0 ! !END!
2425 ! X = 407.84600, 6954.02400, 182.3, 0.0 ! !END!
2426 ! X = 407.94700, 6954.02000, 180.5, 0.0 ! !END!
2427 ! X = 407.96100, 6953.64000, 181.3, 0.0 ! !END!
2428 ! X = 408.06500, 6955.85100, 189.8, 0.0 ! !END!
2429 ! X = 408.10100, 6954.04000, 177.8, 0.0 ! !END!
2430 ! X = 408.11800, 6955.70600, 199.7, 0.0 ! !END!
2431 ! X = 408.13100, 6955.74000, 195.7, 0.0 ! !END!
2432 ! X = 408.13300, 6953.87000, 180.6, 0.0 ! !END!
2433 ! X = 408.14600, 6955.98100, 175.4, 0.0 ! !END!

2434 ! X = 408.19300, 6955.72400, 194.7, 0.0 ! !END!
2435 ! X = 408.21000, 6955.85400, 184.3, 0.0 ! !END!
2436 ! X = 408.25500, 6955.98300, 173.6, 0.0 ! !END!
2437 ! X = 408.25700, 6955.72800, 189.7, 0.0 ! !END!
2438 ! X = 408.29100, 6955.74100, 187.6, 0.0 ! !END!
2439 ! X = 408.29300, 6955.92500, 175.1, 0.0 ! !END!
2440 ! X = 408.30000, 6955.80000, 179.0, 0.0 ! !END!
2441 ! X = 408.30800, 6953.95000, 177.0, 0.0 ! !END!
2442 ! X = 408.31500, 6955.85700, 175.3, 0.0 ! !END!
2443 ! X = 408.40100, 6954.04000, 175.4, 0.0 ! !END!
2444 ! X = 408.49400, 6957.02000, 171.9, 0.0 ! !END!
2445 ! X = 408.50200, 6953.92000, 175.3, 0.0 ! !END!
2446 ! X = 408.50400, 6955.70500, 178.6, 0.0 ! !END!
2447 ! X = 408.83200, 6953.78000, 175.5, 0.0 ! !END!
2448 ! X = 408.87100, 6954.30000, 171.5, 0.0 ! !END!
2449 ! X = 408.96700, 6954.29000, 171.7, 0.0 ! !END!
2450 ! X = 408.99000, 6954.11200, 171.0, 0.0 ! !END!
2451 ! X = 408.99800, 6955.22700, 186.6, 0.0 ! !END!
2452 ! X = 409.04100, 6956.45500, 163.4, 0.0 ! !END!
2453 ! X = 409.07100, 6954.99000, 186.6, 0.0 ! !END!
2454 ! X = 409.09900, 6953.92000, 172.6, 0.0 ! !END!
2455 ! X = 409.18900, 6953.73000, 173.1, 0.0 ! !END!
2456 ! X = 409.21300, 6954.56000, 186.7, 0.0 ! !END!
2457 ! X = 409.25100, 6953.99100, 171.1, 0.0 ! !END!
2458 ! X = 409.25400, 6953.48000, 170.3, 0.0 ! !END!
2459 ! X = 409.27200, 6953.53000, 169.8, 0.0 ! !END!
2460 ! X = 409.28300, 6954.82000, 187.2, 0.0 ! !END!
2461 ! X = 409.28300, 6954.82000, 187.2, 0.0 ! !END!
2462 ! X = 409.28300, 6954.82000, 187.2, 0.0 ! !END!
2463 ! X = 409.28400, 6955.04900, 181.3, 0.0 ! !END!
2464 ! X = 409.31100, 6954.00000, 171.2, 0.0 ! !END!
2465 ! X = 409.33600, 6953.63000, 166.7, 0.0 ! !END!
2466 ! X = 409.36200, 6954.07600, 171.4, 0.0 ! !END!
2467 ! X = 409.39100, 6954.82200, 187.6, 0.0 ! !END!
2468 ! X = 409.41600, 6956.86000, 165.7, 0.0 ! !END!
2469 ! X = 409.41700, 6956.72000, 164.8, 0.0 ! !END!
2470 ! X = 409.42000, 6953.82000, 170.2, 0.0 ! !END!
2471 ! X = 409.44200, 6953.22000, 166.1, 0.0 ! !END!
2472 ! X = 409.46700, 6953.65000, 168.3, 0.0 ! !END!
2473 ! X = 409.50200, 6954.18400, 175.6, 0.0 ! !END!
2474 ! X = 409.50900, 6955.69700, 163.3, 0.0 ! !END!
2475 ! X = 409.51200, 6954.25300, 176.8, 0.0 ! !END!
2476 ! X = 409.51300, 6954.52400, 181.4, 0.0 ! !END!
2477 ! X = 409.51400, 6954.35400, 177.2, 0.0 ! !END!
2478 ! X = 409.51800, 6954.75500, 190.2, 0.0 ! !END!
2479 ! X = 409.55000, 6953.58000, 167.6, 0.0 ! !END!
2480 ! X = 409.56000, 6954.62300, 190.3, 0.0 ! !END!
2481 ! X = 409.57000, 6956.34200, 163.8, 0.0 ! !END!
2482 ! X = 409.57200, 6953.74000, 170.3, 0.0 ! !END!
2483 ! X = 409.57600, 6956.99000, 170.3, 0.0 ! !END!
2484 ! X = 409.58400, 6954.05400, 175.7, 0.0 ! !END!
2485 ! X = 409.58600, 6953.52000, 166.4, 0.0 ! !END!
2486 ! X = 409.59300, 6957.02000, 171.0, 0.0 ! !END!
2487 ! X = 409.60000, 6954.24000, 177.5, 0.0 ! !END!
2488 ! X = 409.60300, 6954.33600, 176.8, 0.0 ! !END!
2489 ! X = 409.60700, 6953.43000, 165.2, 0.0 ! !END!
2490 ! X = 409.60800, 6957.05000, 172.2, 0.0 ! !END!
2491 ! X = 409.61600, 6954.14000, 177.9, 0.0 ! !END!
2492 ! X = 409.63300, 6954.50200, 180.3, 0.0 ! !END!
2493 ! X = 409.64300, 6953.34000, 164.6, 0.0 ! !END!
2494 ! X = 409.66600, 6954.72100, 190.2, 0.0 ! !END!
2495 ! X = 409.67500, 6953.26000, 164.3, 0.0 ! !END!
2496 ! X = 409.68000, 6954.01700, 182.3, 0.0 ! !END!
2497 ! X = 409.71700, 6953.20000, 164.1, 0.0 ! !END!
2498 ! X = 409.72300, 6954.73600, 190.2, 0.0 ! !END!
2499 ! X = 409.72700, 6954.58900, 186.7, 0.0 ! !END!
2500 ! X = 409.76100, 6953.40400, 165.1, 0.0 ! !END!
2501 ! X = 409.77200, 6953.14000, 161.8, 0.0 ! !END!
2502 ! X = 409.79200, 6953.44300, 165.7, 0.0 ! !END!
2503 ! X = 409.81400, 6953.07000, 160.5, 0.0 ! !END!
2504 ! X = 409.82100, 6953.85000, 178.5, 0.0 ! !END!

2505 ! X = 409.83200, 6953.91800, 180.5, 0.0 ! !END!
2506 ! X = 409.87300, 6952.98000, 159.8, 0.0 ! !END!
2507 ! X = 409.89000, 6953.71000, 176.5, 0.0 ! !END!
2508 ! X = 409.90000, 6956.46300, 189.0, 0.0 ! !END!
2509 ! X = 409.91800, 6956.16800, 183.3, 0.0 ! !END!
2510 ! X = 409.92900, 6953.91500, 179.7, 0.0 ! !END!
2511 ! X = 409.96800, 6953.75800, 178.1, 0.0 ! !END!
2512 ! X = 409.97900, 6953.91000, 179.1, 0.0 ! !END!
2513 ! X = 410.00600, 6953.57000, 175.0, 0.0 ! !END!
2514 ! X = 410.03000, 6953.65000, 176.4, 0.0 ! !END!
2515 ! X = 410.03100, 6953.71000, 177.4, 0.0 ! !END!
2516 ! X = 410.03100, 6952.94000, 159.2, 0.0 ! !END!
2517 ! X = 410.03800, 6953.50000, 173.5, 0.0 ! !END!
2518 ! X = 410.05000, 6953.84600, 177.0, 0.0 ! !END!
2519 ! X = 410.11300, 6953.41000, 174.3, 0.0 ! !END!
2520 ! X = 410.11400, 6953.81200, 176.3, 0.0 ! !END!
2521 ! X = 410.14700, 6952.87000, 158.0, 0.0 ! !END!
2522 ! X = 410.14700, 6952.87000, 158.0, 0.0 ! !END!
2523 ! X = 410.14700, 6952.87000, 158.0, 0.0 ! !END!
2524 ! X = 410.15500, 6955.44000, 165.5, 0.0 ! !END!
2525 ! X = 410.15800, 6953.71000, 176.1, 0.0 ! !END!
2526 ! X = 410.16200, 6953.83100, 175.7, 0.0 ! !END!
2527 ! X = 410.17400, 6953.63000, 176.2, 0.0 ! !END!
2528 ! X = 410.17500, 6953.52100, 174.1, 0.0 ! !END!
2529 ! X = 410.18300, 6953.51000, 174.0, 0.0 ! !END!
2530 ! X = 410.19400, 6953.31000, 170.4, 0.0 ! !END!
2531 ! X = 410.20800, 6954.01700, 172.1, 0.0 ! !END!
2532 ! X = 410.22300, 6953.80000, 172.7, 0.0 ! !END!
2533 ! X = 410.24400, 6953.49000, 173.1, 0.0 ! !END!
2534 ! X = 410.26900, 6953.02000, 159.4, 0.0 ! !END!
2535 ! X = 410.27200, 6953.65000, 168.4, 0.0 ! !END!
2536 ! X = 410.28500, 6953.31000, 171.8, 0.0 ! !END!
2537 ! X = 410.35200, 6953.27000, 171.5, 0.0 ! !END!
2538 ! X = 410.36100, 6953.85000, 169.2, 0.0 ! !END!
2539 ! X = 410.39500, 6952.66000, 159.4, 0.0 ! !END!
2540 ! X = 410.42100, 6953.25000, 167.8, 0.0 ! !END!
2541 ! X = 410.47000, 6953.45000, 160.5, 0.0 ! !END!
2542 ! X = 410.49200, 6953.22000, 168.4, 0.0 ! !END!
2543 ! X = 410.61300, 6953.93000, 152.6, 0.0 ! !END!
2544 ! X = 410.66300, 6953.33900, 159.9, 0.0 ! !END!
2545 ! X = 410.80000, 6953.09000, 156.9, 0.0 ! !END!
2546 ! X = 410.80500, 6952.42000, 157.4, 0.0 ! !END!
2547 ! X = 410.84300, 6952.42000, 155.2, 0.0 ! !END!
2548 ! X = 410.85700, 6952.58000, 152.8, 0.0 ! !END!
2549 ! X = 410.86700, 6952.10000, 170.0, 0.0 ! !END!
2550 ! X = 410.86700, 6952.10000, 170.0, 0.0 ! !END!
2551 ! X = 410.87800, 6952.42000, 153.1, 0.0 ! !END!
2552 ! X = 410.87900, 6952.38000, 155.3, 0.0 ! !END!
2553 ! X = 410.88000, 6952.40000, 154.0, 0.0 ! !END!
2554 ! X = 410.88000, 6952.37000, 155.9, 0.0 ! !END!
2555 ! X = 410.88100, 6952.35000, 157.4, 0.0 ! !END!
2556 ! X = 410.88100, 6952.37000, 155.8, 0.0 ! !END!
2557 ! X = 410.88100, 6952.36000, 156.5, 0.0 ! !END!
2558 ! X = 410.88100, 6952.36000, 156.5, 0.0 ! !END!
2559 ! X = 410.88200, 6952.36000, 156.4, 0.0 ! !END!
2560 ! X = 410.88500, 6952.33000, 158.3, 0.0 ! !END!
2561 ! X = 410.88800, 6952.76000, 153.2, 0.0 ! !END!
2562 ! X = 410.89700, 6953.45800, 168.3, 0.0 ! !END!
2563 ! X = 410.90000, 6952.39000, 153.9, 0.0 ! !END!
2564 ! X = 410.90100, 6952.36000, 156.0, 0.0 ! !END!
2565 ! X = 410.90100, 6952.33000, 158.1, 0.0 ! !END!
2566 ! X = 410.90200, 6952.40000, 153.2, 0.0 ! !END!
2567 ! X = 410.90600, 6952.42000, 151.7, 0.0 ! !END!
2568 ! X = 410.90700, 6954.92600, 167.4, 0.0 ! !END!
2569 ! X = 410.91500, 6952.33000, 157.9, 0.0 ! !END!
2570 ! X = 410.91700, 6952.38000, 154.2, 0.0 ! !END!
2571 ! X = 410.92000, 6952.40000, 152.3, 0.0 ! !END!
2572 ! X = 410.92100, 6952.36000, 154.5, 0.0 ! !END!
2573 ! X = 410.92300, 6952.42000, 151.6, 0.0 ! !END!
2574 ! X = 410.92700, 6952.44000, 151.3, 0.0 ! !END!
2575 ! X = 410.93100, 6952.33000, 157.2, 0.0 ! !END!

2576 ! X = 410.94000, 6952.40000, 152.4, 0.0 ! !END!
2577 ! X = 410.94100, 6952.39000, 152.8, 0.0 ! !END!
2578 ! X = 410.94100, 6952.38000, 153.3, 0.0 ! !END!
2579 ! X = 410.94200, 6952.42000, 151.7, 0.0 ! !END!
2580 ! X = 410.94200, 6952.34000, 156.5, 0.0 ! !END!
2581 ! X = 410.94300, 6952.36000, 154.4, 0.0 ! !END!
2582 ! X = 410.95900, 6952.34000, 156.2, 0.0 ! !END!
2583 ! X = 410.96000, 6952.36000, 154.3, 0.0 ! !END!
2584 ! X = 410.96700, 6952.47000, 151.4, 0.0 ! !END!
2585 ! X = 410.99300, 6954.95500, 170.2, 0.0 ! !END!
2586 ! X = 411.01500, 6952.76000, 151.8, 0.0 ! !END!
2587 ! X = 411.03400, 6955.02800, 170.6, 0.0 ! !END!
2588 ! X = 411.07000, 6955.02300, 169.4, 0.0 ! !END!
2589 ! X = 411.10200, 6952.06000, 174.1, 0.0 ! !END!
2590 ! X = 411.10200, 6952.06000, 174.1, 0.0 ! !END!
2591 ! X = 411.13800, 6953.93100, 153.0, 0.0 ! !END!
2592 ! X = 411.18100, 6953.06000, 157.7, 0.0 ! !END!
2593 ! X = 411.18100, 6953.06000, 157.7, 0.0 ! !END!
2594 ! X = 411.19600, 6955.46000, 185.9, 0.0 ! !END!
2595 ! X = 411.22800, 6952.77000, 149.2, 0.0 ! !END!
2596 ! X = 411.29800, 6953.48100, 160.1, 0.0 ! !END!
2597 ! X = 411.43300, 6952.91000, 147.2, 0.0 ! !END!
2598 ! X = 411.45300, 6953.28000, 149.5, 0.0 ! !END!
2599 ! X = 411.48700, 6955.59000, 191.2, 0.0 ! !END!
2600 ! X = 411.48800, 6953.21000, 148.0, 0.0 ! !END!
2601 ! X = 411.48900, 6953.36000, 149.4, 0.0 ! !END!
2602 ! X = 411.52500, 6952.67000, 148.2, 0.0 ! !END!
2603 ! X = 411.52600, 6952.76700, 147.3, 0.0 ! !END!
2604 ! X = 411.54000, 6955.61000, 192.5, 0.0 ! !END!
2605 ! X = 411.54800, 6952.83200, 147.1, 0.0 ! !END!
2606 ! X = 411.54900, 6953.41300, 147.6, 0.0 ! !END!
2607 ! X = 411.55200, 6952.90000, 146.8, 0.0 ! !END!
2608 ! X = 411.55900, 6952.96200, 146.3, 0.0 ! !END!
2609 ! X = 411.56900, 6953.09000, 146.2, 0.0 ! !END!
2610 ! X = 411.58000, 6953.15000, 146.6, 0.0 ! !END!
2611 ! X = 411.58900, 6952.30000, 161.6, 0.0 ! !END!
2612 ! X = 411.59100, 6953.25000, 147.2, 0.0 ! !END!
2613 ! X = 411.59900, 6953.44900, 146.7, 0.0 ! !END!
2614 ! X = 411.60400, 6953.01600, 146.1, 0.0 ! !END!
2615 ! X = 411.62500, 6952.63000, 148.2, 0.0 ! !END!
2616 ! X = 411.63400, 6952.73000, 147.3, 0.0 ! !END!
2617 ! X = 411.64200, 6952.37000, 157.2, 0.0 ! !END!
2618 ! X = 411.65500, 6952.86000, 146.1, 0.0 ! !END!
2619 ! X = 411.66400, 6952.92000, 146.0, 0.0 ! !END!
2620 ! X = 411.67600, 6952.99000, 145.6, 0.0 ! !END!
2621 ! X = 411.67600, 6952.79000, 146.3, 0.0 ! !END!
2622 ! X = 411.67800, 6953.47900, 146.1, 0.0 ! !END!
2623 ! X = 411.69200, 6953.33000, 146.4, 0.0 ! !END!
2624 ! X = 411.70000, 6953.12000, 145.7, 0.0 ! !END!
2625 ! X = 411.70300, 6953.25000, 146.2, 0.0 ! !END!
2626 ! X = 411.70700, 6953.18000, 146.1, 0.0 ! !END!
2627 ! X = 411.71500, 6953.06000, 145.4, 0.0 ! !END!
2628 ! X = 411.72900, 6952.24000, 164.6, 0.0 ! !END!
2629 ! X = 411.73900, 6952.32000, 161.6, 0.0 ! !END!
2630 ! X = 411.74200, 6954.18000, 165.3, 0.0 ! !END!
2631 ! X = 411.74900, 6954.21000, 165.4, 0.0 ! !END!
2632 ! X = 411.75300, 6953.48200, 145.8, 0.0 ! !END!
2633 ! X = 411.75300, 6954.06000, 165.4, 0.0 ! !END!
2634 ! X = 411.75800, 6952.39000, 155.9, 0.0 ! !END!
2635 ! X = 411.76300, 6951.96000, 171.1, 0.0 ! !END!
2636 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2637 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2638 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2639 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2640 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2641 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2642 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2643 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2644 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2645 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2646 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!

2647 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2648 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2649 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2650 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2651 ! X = 411.77900, 6952.22000, 163.4, 0.0 ! !END!
2652 ! X = 411.78200, 6952.55000, 150.8, 0.0 ! !END!
2653 ! X = 411.78200, 6953.41000, 145.4, 0.0 ! !END!
2654 ! X = 411.78900, 6952.62000, 148.3, 0.0 ! !END!
2655 ! X = 411.79900, 6952.69000, 147.3, 0.0 ! !END!
2656 ! X = 411.80200, 6955.45000, 190.0, 0.0 ! !END!
2657 ! X = 411.80800, 6952.76000, 146.5, 0.0 ! !END!
2658 ! X = 411.81500, 6952.31000, 160.1, 0.0 ! !END!
2659 ! X = 411.81700, 6952.82000, 146.0, 0.0 ! !END!
2660 ! X = 411.82200, 6954.00100, 160.4, 0.0 ! !END!
2661 ! X = 411.82300, 6955.62000, 194.9, 0.0 ! !END!
2662 ! X = 411.82700, 6952.89000, 145.7, 0.0 ! !END!
2663 ! X = 411.82800, 6952.38000, 156.5, 0.0 ! !END!
2664 ! X = 411.82900, 6952.24000, 161.1, 0.0 ! !END!
2665 ! X = 411.83600, 6952.95000, 145.3, 0.0 ! !END!
2666 ! X = 411.84600, 6953.02000, 145.0, 0.0 ! !END!
2667 ! X = 411.85200, 6952.29000, 158.9, 0.0 ! !END!
2668 ! X = 411.85500, 6953.08000, 145.0, 0.0 ! !END!
2669 ! X = 411.85500, 6952.31000, 158.6, 0.0 ! !END!
2670 ! X = 411.85600, 6952.21000, 160.2, 0.0 ! !END!
2671 ! X = 411.86400, 6953.15000, 145.2, 0.0 ! !END!
2672 ! X = 411.87400, 6953.21000, 145.3, 0.0 ! !END!
2673 ! X = 411.88300, 6952.28000, 158.6, 0.0 ! !END!
2674 ! X = 411.88500, 6952.21000, 159.3, 0.0 ! !END!
2675 ! X = 411.88500, 6955.10000, 187.3, 0.0 ! !END!
2676 ! X = 411.88500, 6955.10000, 187.3, 0.0 ! !END!
2677 ! X = 411.88500, 6955.10000, 187.3, 0.0 ! !END!
2678 ! X = 411.88500, 6955.10000, 187.3, 0.0 ! !END!
2679 ! X = 411.88500, 6955.10000, 187.3, 0.0 ! !END!
2680 ! X = 411.91200, 6952.29000, 158.4, 0.0 ! !END!
2681 ! X = 411.91400, 6952.21000, 158.5, 0.0 ! !END!
2682 ! X = 411.92400, 6952.33000, 157.6, 0.0 ! !END!
2683 ! X = 411.92400, 6952.33000, 157.6, 0.0 ! !END!
2684 ! X = 411.92400, 6953.44500, 142.4, 0.0 ! !END!
2685 ! X = 411.93000, 6952.52000, 153.4, 0.0 ! !END!
2686 ! X = 411.94500, 6952.21000, 158.3, 0.0 ! !END!
2687 ! X = 411.95100, 6952.61000, 149.4, 0.0 ! !END!
2688 ! X = 411.96200, 6952.69000, 148.6, 0.0 ! !END!
2689 ! X = 411.97300, 6952.76000, 147.1, 0.0 ! !END!
2690 ! X = 411.98400, 6952.84000, 145.9, 0.0 ! !END!
2691 ! X = 411.99400, 6952.91000, 145.4, 0.0 ! !END!
2692 ! X = 412.00300, 6951.88000, 161.3, 0.0 ! !END!
2693 ! X = 412.00700, 6952.97000, 145.1, 0.0 ! !END!
2694 ! X = 412.00800, 6953.15000, 144.9, 0.0 ! !END!
2695 ! X = 412.01800, 6953.06000, 144.8, 0.0 ! !END!
2696 ! X = 412.07200, 6952.49000, 154.4, 0.0 ! !END!
2697 ! X = 412.08000, 6953.41900, 140.6, 0.0 ! !END!
2698 ! X = 412.08200, 6952.56000, 152.1, 0.0 ! !END!
2699 ! X = 412.09200, 6952.22000, 154.5, 0.0 ! !END!
2700 ! X = 412.09500, 6955.19000, 189.7, 0.0 ! !END!
2701 ! X = 412.09800, 6951.96000, 156.3, 0.0 ! !END!
2702 ! X = 412.10000, 6953.14000, 144.6, 0.0 ! !END!
2703 ! X = 412.10200, 6952.69000, 150.6, 0.0 ! !END!
2704 ! X = 412.10400, 6952.61000, 150.9, 0.0 ! !END!
2705 ! X = 412.10900, 6951.87000, 160.0, 0.0 ! !END!
2706 ! X = 412.11200, 6952.76000, 147.4, 0.0 ! !END!
2707 ! X = 412.11700, 6952.09000, 153.1, 0.0 ! !END!
2708 ! X = 412.12200, 6952.83000, 145.7, 0.0 ! !END!
2709 ! X = 412.13200, 6952.90000, 145.4, 0.0 ! !END!
2710 ! X = 412.14200, 6952.97000, 144.7, 0.0 ! !END!
2711 ! X = 412.15200, 6952.33000, 153.5, 0.0 ! !END!
2712 ! X = 412.15200, 6952.33000, 153.5, 0.0 ! !END!
2713 ! X = 412.15200, 6952.33000, 153.5, 0.0 ! !END!
2714 ! X = 412.15200, 6952.33000, 153.5, 0.0 ! !END!
2715 ! X = 412.15200, 6952.33000, 153.5, 0.0 ! !END!
2716 ! X = 412.15200, 6952.33000, 153.5, 0.0 ! !END!
2717 ! X = 412.15500, 6953.04000, 144.8, 0.0 ! !END!

2718 ! X = 412.19100, 6953.13000, 144.4, 0.0 ! !END!
2719 ! X = 412.21400, 6952.60000, 149.1, 0.0 ! !END!
2720 ! X = 412.23700, 6952.46000, 149.4, 0.0 ! !END!
2721 ! X = 412.24600, 6952.53000, 148.8, 0.0 ! !END!
2722 ! X = 412.26600, 6952.67000, 145.9, 0.0 ! !END!
2723 ! X = 412.27000, 6955.59000, 207.4, 0.0 ! !END!
2724 ! X = 412.27500, 6952.74000, 145.3, 0.0 ! !END!
2725 ! X = 412.28300, 6955.70000, 210.4, 0.0 ! !END!
2726 ! X = 412.28500, 6952.80000, 143.7, 0.0 ! !END!
2727 ! X = 412.29400, 6952.87000, 142.8, 0.0 ! !END!
2728 ! X = 412.30300, 6952.94000, 143.4, 0.0 ! !END!
2729 ! X = 412.31500, 6953.01000, 143.6, 0.0 ! !END!
2730 ! X = 412.32400, 6953.08000, 143.6, 0.0 ! !END!
2731 ! X = 412.33300, 6953.14000, 143.7, 0.0 ! !END!
2732 ! X = 412.34300, 6952.27000, 146.6, 0.0 ! !END!
2733 ! X = 412.37500, 6955.64000, 210.2, 0.0 ! !END!
2734 ! X = 412.48100, 6955.56000, 213.3, 0.0 ! !END!
2735 ! X = 412.52800, 6953.32700, 141.6, 0.0 ! !END!
2736 ! X = 412.65400, 6953.55000, 142.8, 0.0 ! !END!
2737 ! X = 412.70900, 6953.47800, 144.6, 0.0 ! !END!
2738 ! X = 412.71000, 6953.42000, 144.5, 0.0 ! !END!
2739 ! X = 412.71200, 6954.57000, 163.6, 0.0 ! !END!
2740 ! X = 412.76700, 6952.44000, 141.2, 0.0 ! !END!
2741 ! X = 412.77500, 6953.00000, 141.7, 0.0 ! !END!
2742 ! X = 412.79200, 6952.94000, 140.9, 0.0 ! !END!
2743 ! X = 412.81000, 6952.88000, 140.2, 0.0 ! !END!
2744 ! X = 412.81700, 6952.10000, 140.3, 0.0 ! !END!
2745 ! X = 412.82900, 6952.83000, 139.9, 0.0 ! !END!
2746 ! X = 412.85200, 6952.70400, 137.8, 0.0 ! !END!
2747 ! X = 412.85300, 6952.77000, 139.4, 0.0 ! !END!
2748 ! X = 412.90400, 6952.67000, 136.3, 0.0 ! !END!
2749 ! X = 412.93100, 6952.67800, 136.3, 0.0 ! !END!
2750 ! X = 412.96100, 6952.58000, 136.8, 0.0 ! !END!
2751 ! X = 412.96400, 6952.29000, 139.9, 0.0 ! !END!
2752 ! X = 413.00000, 6952.51000, 137.2, 0.0 ! !END!
2753 ! X = 413.06000, 6952.45000, 137.7, 0.0 ! !END!
2754 ! X = 413.11700, 6953.19000, 143.5, 0.0 ! !END!
2755 ! X = 413.14100, 6952.40000, 137.6, 0.0 ! !END!
2756 ! X = 413.17600, 6952.82000, 143.5, 0.0 ! !END!
2757 ! X = 413.21000, 6952.71000, 140.6, 0.0 ! !END!
2758 ! X = 413.21600, 6952.36000, 137.5, 0.0 ! !END!
2759 ! X = 413.22700, 6953.74000, 151.8, 0.0 ! !END!
2760 ! X = 413.22700, 6953.74000, 151.8, 0.0 ! !END!
2761 ! X = 413.32100, 6952.79000, 145.1, 0.0 ! !END!
2762 ! X = 413.33200, 6952.82000, 145.3, 0.0 ! !END!
2763 ! X = 413.38500, 6953.39000, 148.2, 0.0 ! !END!
2764 ! X = 413.42100, 6952.56000, 143.8, 0.0 ! !END!
2765 ! X = 413.45100, 6952.80000, 148.0, 0.0 ! !END!
2766 ! X = 413.46000, 6953.32000, 149.5, 0.0 ! !END!
2767 ! X = 413.46000, 6953.32000, 149.5, 0.0 ! !END!
2768 ! X = 413.46000, 6953.32000, 149.5, 0.0 ! !END!
2769 ! X = 413.46700, 6952.67000, 149.3, 0.0 ! !END!
2770 ! X = 413.46700, 6952.85000, 148.8, 0.0 ! !END!
2771 ! X = 413.47500, 6954.30000, 164.5, 0.0 ! !END!
2772 ! X = 413.47500, 6954.30000, 164.5, 0.0 ! !END!
2773 ! X = 413.47500, 6954.30000, 164.5, 0.0 ! !END!
2774 ! X = 413.47500, 6954.30000, 164.5, 0.0 ! !END!
2775 ! X = 413.47700, 6952.91000, 148.9, 0.0 ! !END!
2776 ! X = 413.48500, 6952.61000, 149.2, 0.0 ! !END!
2777 ! X = 413.49100, 6953.09000, 150.0, 0.0 ! !END!
2778 ! X = 413.49400, 6952.73000, 149.3, 0.0 ! !END!
2779 ! X = 413.50600, 6953.05000, 150.4, 0.0 ! !END!
2780 ! X = 413.51000, 6952.65000, 151.1, 0.0 ! !END!
2781 ! X = 413.51400, 6953.03000, 150.4, 0.0 ! !END!
2782 ! X = 413.51600, 6952.75000, 149.3, 0.0 ! !END!
2783 ! X = 413.51900, 6952.77000, 149.3, 0.0 ! !END!
2784 ! X = 413.52200, 6953.01000, 150.3, 0.0 ! !END!
2785 ! X = 413.52700, 6952.79000, 149.9, 0.0 ! !END!
2786 ! X = 413.52900, 6953.15000, 150.6, 0.0 ! !END!
2787 ! X = 413.53000, 6952.71000, 150.6, 0.0 ! !END!
2788 ! X = 413.53100, 6952.90000, 149.8, 0.0 ! !END!

2789 ! X = 413.53600, 6953.28000, 150.4, 0.0 ! !END!
2790 ! X = 413.53700, 6952.99000, 150.6, 0.0 ! !END!
2791 ! X = 413.53800, 6952.95000, 150.7, 0.0 ! !END!
2792 ! X = 413.53900, 6952.97000, 150.7, 0.0 ! !END!
2793 ! X = 413.54400, 6952.69000, 150.9, 0.0 ! !END!
2794 ! X = 413.54500, 6953.09000, 150.6, 0.0 ! !END!
2795 ! X = 413.56000, 6953.07000, 150.6, 0.0 ! !END!
2796 ! X = 413.56600, 6952.79000, 150.4, 0.0 ! !END!
2797 ! X = 413.56700, 6952.88000, 150.4, 0.0 ! !END!
2798 ! X = 413.57200, 6953.04000, 151.2, 0.0 ! !END!
2799 ! X = 413.57500, 6953.14000, 151.3, 0.0 ! !END!
2800 ! X = 413.57700, 6952.81000, 150.6, 0.0 ! !END!
2801 ! X = 413.58200, 6952.87000, 150.8, 0.0 ! !END!
2802 ! X = 413.58400, 6953.02000, 151.7, 0.0 ! !END!
2803 ! X = 413.58700, 6952.83000, 150.7, 0.0 ! !END!
2804 ! X = 413.59200, 6952.93000, 151.6, 0.0 ! !END!
2805 ! X = 413.59600, 6952.86000, 151.3, 0.0 ! !END!
2806 ! X = 413.60400, 6952.96000, 152.1, 0.0 ! !END!
2807 ! X = 413.60400, 6953.27000, 151.0, 0.0 ! !END!
2808 ! X = 413.61100, 6953.14000, 152.4, 0.0 ! !END!
2809 ! X = 413.61800, 6952.91000, 152.5, 0.0 ! !END!
2810 ! X = 413.62400, 6952.84000, 152.6, 0.0 ! !END!
2811 ! X = 413.62800, 6953.06000, 154.0, 0.0 ! !END!
2812 ! X = 413.63600, 6952.98000, 153.7, 0.0 ! !END!
2813 ! X = 413.64100, 6952.90000, 153.3, 0.0 ! !END!
2814 ! X = 413.65500, 6952.99000, 154.5, 0.0 ! !END!
2815 ! X = 413.65600, 6953.11000, 154.5, 0.0 ! !END!
2816 ! X = 413.65800, 6953.23000, 152.1, 0.0 ! !END!
2817 ! X = 413.66300, 6952.89000, 153.9, 0.0 ! !END!
2818 ! X = 413.66400, 6953.15000, 153.8, 0.0 ! !END!
2819 ! X = 413.66700, 6952.92000, 154.2, 0.0 ! !END!
2820 ! X = 413.67000, 6953.28000, 152.0, 0.0 ! !END!
2821 ! X = 413.67300, 6953.00000, 155.7, 0.0 ! !END!
2822 ! X = 413.67500, 6953.32000, 151.6, 0.0 ! !END!
2823 ! X = 413.68300, 6953.21000, 152.4, 0.0 ! !END!
2824 ! X = 413.68900, 6952.97000, 155.4, 0.0 ! !END!
2825 ! X = 413.69000, 6953.23000, 152.2, 0.0 ! !END!
2826 ! X = 413.69100, 6953.01000, 156.5, 0.0 ! !END!
2827 ! X = 413.71000, 6953.01000, 156.9, 0.0 ! !END!
2828 ! X = 413.71800, 6952.97000, 155.8, 0.0 ! !END!
2829 ! X = 413.73000, 6953.00000, 156.9, 0.0 ! !END!
2830 ! X = 386.07800, 6959.13800, 465.0, 0.0 ! !END!
2831 ! X = 386.27800, 6959.13800, 469.0, 0.0 ! !END!
2832 ! X = 386.47800, 6959.13800, 472.9, 0.0 ! !END!
2833 ! X = 386.67800, 6959.13800, 476.7, 0.0 ! !END!
2834 ! X = 386.87800, 6959.13800, 480.4, 0.0 ! !END!
2835 ! X = 385.67800, 6958.93800, 454.5, 0.0 ! !END!
2836 ! X = 385.87800, 6958.93800, 456.1, 0.0 ! !END!
2837 ! X = 386.07800, 6958.93800, 457.7, 0.0 ! !END!
2838 ! X = 386.27800, 6958.93800, 459.4, 0.0 ! !END!
2839 ! X = 386.47800, 6958.93800, 462.0, 0.0 ! !END!
2840 ! X = 386.67800, 6958.93800, 465.3, 0.0 ! !END!
2841 ! X = 386.87800, 6958.93800, 469.4, 0.0 ! !END!
2842 ! X = 387.07800, 6958.93800, 473.0, 0.0 ! !END!
2843 ! X = 387.27800, 6958.93800, 480.0, 0.0 ! !END!
2844 ! X = 385.67800, 6958.73800, 451.2, 0.0 ! !END!
2845 ! X = 385.87800, 6958.73800, 452.9, 0.0 ! !END!
2846 ! X = 386.07800, 6958.73800, 453.5, 0.0 ! !END!
2847 ! X = 386.67800, 6958.73800, 459.4, 0.0 ! !END!
2848 ! X = 386.87800, 6958.73800, 462.9, 0.0 ! !END!
2849 ! X = 387.07800, 6958.73800, 465.6, 0.0 ! !END!
2850 ! X = 387.27800, 6958.73800, 468.6, 0.0 ! !END!
2851 ! X = 387.47800, 6958.73800, 475.0, 0.0 ! !END!
2852 ! X = 387.67800, 6958.73800, 482.3, 0.0 ! !END!
2853 ! X = 387.87800, 6958.73800, 485.1, 0.0 ! !END!
2854 ! X = 388.07800, 6958.73800, 487.9, 0.0 ! !END!
2855 ! X = 388.27800, 6958.73800, 492.8, 0.0 ! !END!
2856 ! X = 388.47800, 6958.73800, 494.9, 0.0 ! !END!
2857 ! X = 388.67800, 6958.73800, 492.3, 0.0 ! !END!
2858 ! X = 388.87800, 6958.73800, 491.8, 0.0 ! !END!
2859 ! X = 389.07800, 6958.73800, 496.5, 0.0 ! !END!

2860 ! X = 389.07800, 6958.73800, 496.5, 0.0 ! !END!
2861 ! X = 389.27800, 6958.73800, 504.6, 0.0 ! !END!
2862 ! X = 389.27800, 6958.73800, 504.6, 0.0 ! !END!
2863 ! X = 389.47800, 6958.73800, 512.5, 0.0 ! !END!
2864 ! X = 389.47800, 6958.73800, 512.5, 0.0 ! !END!
2865 ! X = 389.67800, 6958.73800, 509.8, 0.0 ! !END!
2866 ! X = 389.87800, 6958.73800, 498.8, 0.0 ! !END!
2867 ! X = 390.07800, 6958.73800, 491.8, 0.0 ! !END!
2868 ! X = 390.27800, 6958.73800, 495.0, 0.0 ! !END!
2869 ! X = 390.47800, 6958.73800, 504.1, 0.0 ! !END!
2870 ! X = 390.67800, 6958.73800, 518.9, 0.0 ! !END!
2871 ! X = 390.87800, 6958.73800, 538.7, 0.0 ! !END!
2872 ! X = 385.47800, 6958.53800, 448.5, 0.0 ! !END!
2873 ! X = 385.67800, 6958.53800, 449.5, 0.0 ! !END!
2874 ! X = 385.87800, 6958.53800, 451.0, 0.0 ! !END!
2875 ! X = 387.07800, 6958.53800, 460.7, 0.0 ! !END!
2876 ! X = 387.27800, 6958.53800, 462.9, 0.0 ! !END!
2877 ! X = 387.47800, 6958.53800, 465.6, 0.0 ! !END!
2878 ! X = 387.67800, 6958.53800, 470.6, 0.0 ! !END!
2879 ! X = 387.87800, 6958.53800, 476.1, 0.0 ! !END!
2880 ! X = 388.07800, 6958.53800, 482.3, 0.0 ! !END!
2881 ! X = 388.27800, 6958.53800, 489.5, 0.0 ! !END!
2882 ! X = 388.47800, 6958.53800, 485.8, 0.0 ! !END!
2883 ! X = 388.67800, 6958.53800, 481.1, 0.0 ! !END!
2884 ! X = 388.67800, 6958.53800, 481.1, 0.0 ! !END!
2885 ! X = 388.87800, 6958.53800, 479.9, 0.0 ! !END!
2886 ! X = 388.87800, 6958.53800, 479.9, 0.0 ! !END!
2887 ! X = 389.07800, 6958.53800, 483.5, 0.0 ! !END!
2888 ! X = 389.07800, 6958.53800, 483.5, 0.0 ! !END!
2889 ! X = 389.27800, 6958.53800, 488.5, 0.0 ! !END!
2890 ! X = 389.27800, 6958.53800, 488.5, 0.0 ! !END!
2891 ! X = 389.47800, 6958.53800, 493.8, 0.0 ! !END!
2892 ! X = 389.47800, 6958.53800, 493.8, 0.0 ! !END!
2893 ! X = 389.67800, 6958.53800, 494.7, 0.0 ! !END!
2894 ! X = 389.67800, 6958.53800, 494.7, 0.0 ! !END!
2895 ! X = 389.87800, 6958.53800, 490.7, 0.0 ! !END!
2896 ! X = 389.87800, 6958.53800, 490.7, 0.0 ! !END!
2897 ! X = 390.07800, 6958.53800, 487.1, 0.0 ! !END!
2898 ! X = 390.27800, 6958.53800, 489.5, 0.0 ! !END!
2899 ! X = 390.47800, 6958.53800, 496.1, 0.0 ! !END!
2900 ! X = 390.67800, 6958.53800, 505.9, 0.0 ! !END!
2901 ! X = 390.87800, 6958.53800, 520.1, 0.0 ! !END!
2902 ! X = 391.07800, 6958.53800, 526.1, 0.0 ! !END!
2903 ! X = 391.27800, 6958.53800, 518.3, 0.0 ! !END!
2904 ! X = 391.47800, 6958.53800, 506.0, 0.0 ! !END!
2905 ! X = 385.47800, 6958.33800, 448.7, 0.0 ! !END!
2906 ! X = 385.67800, 6958.33800, 450.7, 0.0 ! !END!
2907 ! X = 385.87800, 6958.33800, 453.9, 0.0 ! !END!
2908 ! X = 387.87800, 6958.33800, 470.0, 0.0 ! !END!
2909 ! X = 388.07800, 6958.33800, 477.5, 0.0 ! !END!
2910 ! X = 388.27800, 6958.33800, 486.4, 0.0 ! !END!
2911 ! X = 388.47800, 6958.33800, 477.6, 0.0 ! !END!
2912 ! X = 388.47800, 6958.33800, 477.6, 0.0 ! !END!
2913 ! X = 388.67800, 6958.33800, 472.9, 0.0 ! !END!
2914 ! X = 388.67800, 6958.33800, 472.9, 0.0 ! !END!
2915 ! X = 388.87800, 6958.33800, 471.8, 0.0 ! !END!
2916 ! X = 388.87800, 6958.33800, 471.8, 0.0 ! !END!
2917 ! X = 389.07800, 6958.33800, 474.0, 0.0 ! !END!
2918 ! X = 389.07800, 6958.33800, 474.0, 0.0 ! !END!
2919 ! X = 389.27800, 6958.33800, 476.5, 0.0 ! !END!
2920 ! X = 389.27800, 6958.33800, 476.5, 0.0 ! !END!
2921 ! X = 389.47800, 6958.33800, 481.4, 0.0 ! !END!
2922 ! X = 389.47800, 6958.33800, 481.4, 0.0 ! !END!
2923 ! X = 389.67800, 6958.33800, 484.8, 0.0 ! !END!
2924 ! X = 389.67800, 6958.33800, 484.8, 0.0 ! !END!
2925 ! X = 390.67800, 6958.33800, 492.3, 0.0 ! !END!
2926 ! X = 390.87800, 6958.33800, 501.8, 0.0 ! !END!
2927 ! X = 391.07800, 6958.33800, 509.2, 0.0 ! !END!
2928 ! X = 391.27800, 6958.33800, 506.0, 0.0 ! !END!
2929 ! X = 391.47800, 6958.33800, 497.9, 0.0 ! !END!
2930 ! X = 391.67800, 6958.33800, 493.3, 0.0 ! !END!

2931 ! X = 391.87800, 6958.33800, 493.0, 0.0 ! !END!
2932 ! X = 385.47800, 6958.13800, 450.9, 0.0 ! !END!
2933 ! X = 385.67800, 6958.13800, 451.9, 0.0 ! !END!
2934 ! X = 385.87800, 6958.13800, 455.6, 0.0 ! !END!
2935 ! X = 391.27800, 6958.13800, 494.1, 0.0 ! !END!
2936 ! X = 391.47800, 6958.13800, 491.6, 0.0 ! !END!
2937 ! X = 391.67800, 6958.13800, 491.5, 0.0 ! !END!
2938 ! X = 391.87800, 6958.13800, 494.5, 0.0 ! !END!
2939 ! X = 392.07800, 6958.13800, 498.5, 0.0 ! !END!
2940 ! X = 392.27800, 6958.13800, 503.4, 0.0 ! !END!
2941 ! X = 404.07800, 6958.13800, 362.1, 0.0 ! !END!
2942 ! X = 404.27800, 6958.13800, 360.4, 0.0 ! !END!
2943 ! X = 404.47800, 6958.13800, 348.9, 0.0 ! !END!
2944 ! X = 404.67800, 6958.13800, 305.1, 0.0 ! !END!
2945 ! X = 404.87800, 6958.13800, 300.4, 0.0 ! !END!
2946 ! X = 385.47800, 6957.93800, 453.7, 0.0 ! !END!
2947 ! X = 385.67800, 6957.93800, 454.2, 0.0 ! !END!
2948 ! X = 385.87800, 6957.93800, 455.8, 0.0 ! !END!
2949 ! X = 391.87800, 6957.93800, 496.9, 0.0 ! !END!
2950 ! X = 392.07800, 6957.93800, 501.8, 0.0 ! !END!
2951 ! X = 392.27800, 6957.93800, 508.0, 0.0 ! !END!
2952 ! X = 392.47800, 6957.93800, 515.8, 0.0 ! !END!
2953 ! X = 403.47800, 6957.93800, 314.3, 0.0 ! !END!
2954 ! X = 403.67800, 6957.93800, 317.9, 0.0 ! !END!
2955 ! X = 403.87800, 6957.93800, 339.2, 0.0 ! !END!
2956 ! X = 404.07800, 6957.93800, 338.3, 0.0 ! !END!
2957 ! X = 404.27800, 6957.93800, 343.4, 0.0 ! !END!
2958 ! X = 404.47800, 6957.93800, 340.9, 0.0 ! !END!
2959 ! X = 404.67800, 6957.93800, 293.3, 0.0 ! !END!
2960 ! X = 404.87800, 6957.93800, 271.5, 0.0 ! !END!
2961 ! X = 404.87800, 6957.93800, 271.5, 0.0 ! !END!
2962 ! X = 405.07800, 6957.93800, 280.9, 0.0 ! !END!
2963 ! X = 405.07800, 6957.93800, 280.9, 0.0 ! !END!
2964 ! X = 405.27800, 6957.93800, 291.4, 0.0 ! !END!
2965 ! X = 405.27800, 6957.93800, 291.4, 0.0 ! !END!
2966 ! X = 405.47800, 6957.93800, 285.6, 0.0 ! !END!
2967 ! X = 405.47800, 6957.93800, 285.6, 0.0 ! !END!
2968 ! X = 385.67800, 6957.73800, 456.6, 0.0 ! !END!
2969 ! X = 385.87800, 6957.73800, 458.4, 0.0 ! !END!
2970 ! X = 386.07800, 6957.73800, 461.6, 0.0 ! !END!
2971 ! X = 386.27800, 6957.73800, 461.4, 0.0 ! !END!
2972 ! X = 392.07800, 6957.73800, 508.4, 0.0 ! !END!
2973 ! X = 392.27800, 6957.73800, 515.6, 0.0 ! !END!
2974 ! X = 392.47800, 6957.73800, 522.0, 0.0 ! !END!
2975 ! X = 392.67800, 6957.73800, 532.4, 0.0 ! !END!
2976 ! X = 403.07800, 6957.73800, 328.3, 0.0 ! !END!
2977 ! X = 403.27800, 6957.73800, 313.3, 0.0 ! !END!
2978 ! X = 403.47800, 6957.73800, 299.3, 0.0 ! !END!
2979 ! X = 403.67800, 6957.73800, 307.4, 0.0 ! !END!
2980 ! X = 403.87800, 6957.73800, 321.0, 0.0 ! !END!
2981 ! X = 404.07800, 6957.73800, 317.4, 0.0 ! !END!
2982 ! X = 404.27800, 6957.73800, 337.7, 0.0 ! !END!
2983 ! X = 404.47800, 6957.73800, 331.7, 0.0 ! !END!
2984 ! X = 404.47800, 6957.73800, 331.7, 0.0 ! !END!
2985 ! X = 404.67800, 6957.73800, 284.8, 0.0 ! !END!
2986 ! X = 404.67800, 6957.73800, 284.8, 0.0 ! !END!
2987 ! X = 404.87800, 6957.73800, 258.8, 0.0 ! !END!
2988 ! X = 404.87800, 6957.73800, 258.8, 0.0 ! !END!
2989 ! X = 405.07800, 6957.73800, 256.8, 0.0 ! !END!
2990 ! X = 405.07800, 6957.73800, 256.8, 0.0 ! !END!
2991 ! X = 405.27800, 6957.73800, 259.9, 0.0 ! !END!
2992 ! X = 405.27800, 6957.73800, 259.9, 0.0 ! !END!
2993 ! X = 405.47800, 6957.73800, 259.4, 0.0 ! !END!
2994 ! X = 405.47800, 6957.73800, 259.4, 0.0 ! !END!
2995 ! X = 405.67800, 6957.73800, 260.1, 0.0 ! !END!
2996 ! X = 405.67800, 6957.73800, 260.1, 0.0 ! !END!
2997 ! X = 385.87800, 6957.53800, 463.5, 0.0 ! !END!
2998 ! X = 386.07800, 6957.53800, 466.1, 0.0 ! !END!
2999 ! X = 386.27800, 6957.53800, 464.7, 0.0 ! !END!
3000 ! X = 386.47800, 6957.53800, 462.2, 0.0 ! !END!
3001 ! X = 386.67800, 6957.53800, 461.9, 0.0 ! !END!

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3002 ! X =   392.27800,   6957.53800,   527.0,    0.0 !  !END!
3003 ! X =   392.47800,   6957.53800,   532.6,    0.0 !  !END!
3004 ! X =   392.67800,   6957.53800,   542.4,    0.0 !  !END!
3005 ! X =   402.87800,   6957.53800,   318.7,    0.0 !  !END!
3006 ! X =   403.07800,   6957.53800,   304.7,    0.0 !  !END!
3007 ! X =   403.27800,   6957.53800,   291.8,    0.0 !  !END!
3008 ! X =   403.47800,   6957.53800,   282.4,    0.0 !  !END!
3009 ! X =   403.67800,   6957.53800,   289.6,    0.0 !  !END!
3010 ! X =   405.27800,   6957.53800,   242.7,    0.0 !  !END!
3011 ! X =   405.27800,   6957.53800,   242.7,    0.0 !  !END!
3012 ! X =   405.47800,   6957.53800,   241.6,    0.0 !  !END!
3013 ! X =   405.47800,   6957.53800,   241.6,    0.0 !  !END!
3014 ! X =   405.67800,   6957.53800,   245.1,    0.0 !  !END!
3015 ! X =   405.67800,   6957.53800,   245.1,    0.0 !  !END!
3016 ! X =   405.87800,   6957.53800,   255.4,    0.0 !  !END!
3017 ! X =   405.87800,   6957.53800,   255.4,    0.0 !  !END!
3018 ! X =   406.07800,   6957.53800,   259.3,    0.0 !  !END!
3019 ! X =   386.07800,   6957.33800,   471.0,    0.0 !  !END!
3020 ! X =   386.27800,   6957.33800,   469.2,    0.0 !  !END!
3021 ! X =   386.47800,   6957.33800,   465.2,    0.0 !  !END!
3022 ! X =   386.67800,   6957.33800,   464.2,    0.0 !  !END!
3023 ! X =   386.87800,   6957.33800,   465.6,    0.0 !  !END!
3024 ! X =   387.07800,   6957.33800,   470.2,    0.0 !  !END!
3025 ! X =   387.27800,   6957.33800,   480.3,    0.0 !  !END!
3026 ! X =   387.47800,   6957.33800,   489.7,    0.0 !  !END!
3027 ! X =   387.67800,   6957.33800,   491.7,    0.0 !  !END!
3028 ! X =   390.07800,   6957.33800,   491.6,    0.0 !  !END!
3029 ! X =   390.07800,   6957.33800,   491.6,    0.0 !  !END!
3030 ! X =   390.27800,   6957.33800,   498.6,    0.0 !  !END!
3031 ! X =   392.47800,   6957.33800,   550.5,    0.0 !  !END!
3032 ! X =   392.67800,   6957.33800,   564.0,    0.0 !  !END!
3033 ! X =   392.87800,   6957.33800,   579.0,    0.0 !  !END!
3034 ! X =   402.67800,   6957.33800,   297.5,    0.0 !  !END!
3035 ! X =   402.87800,   6957.33800,   292.0,    0.0 !  !END!
3036 ! X =   403.07800,   6957.33800,   282.8,    0.0 !  !END!
3037 ! X =   403.27800,   6957.33800,   281.3,    0.0 !  !END!
3038 ! X =   405.67800,   6957.33800,   231.5,    0.0 !  !END!
3039 ! X =   405.67800,   6957.33800,   231.5,    0.0 !  !END!
3040 ! X =   405.87800,   6957.33800,   234.2,    0.0 !  !END!
3041 ! X =   405.87800,   6957.33800,   234.2,    0.0 !  !END!
3042 ! X =   406.07800,   6957.33800,   235.9,    0.0 !  !END!
3043 ! X =   386.67800,   6957.13800,   467.1,    0.0 !  !END!
3044 ! X =   386.87800,   6957.13800,   467.1,    0.0 !  !END!
3045 ! X =   387.07800,   6957.13800,   470.3,    0.0 !  !END!
3046 ! X =   387.27800,   6957.13800,   478.4,    0.0 !  !END!
3047 ! X =   387.47800,   6957.13800,   487.9,    0.0 !  !END!
3048 ! X =   387.67800,   6957.13800,   493.8,    0.0 !  !END!
3049 ! X =   387.87800,   6957.13800,   491.2,    0.0 !  !END!
3050 ! X =   388.07800,   6957.13800,   486.4,    0.0 !  !END!
3051 ! X =   388.27800,   6957.13800,   482.0,    0.0 !  !END!
3052 ! X =   388.47800,   6957.13800,   484.6,    0.0 !  !END!
3053 ! X =   388.67800,   6957.13800,   492.4,    0.0 !  !END!
3054 ! X =   388.67800,   6957.13800,   492.4,    0.0 !  !END!
3055 ! X =   388.87800,   6957.13800,   499.9,    0.0 !  !END!
3056 ! X =   388.87800,   6957.13800,   499.9,    0.0 !  !END!
3057 ! X =   389.07800,   6957.13800,   498.8,    0.0 !  !END!
3058 ! X =   389.07800,   6957.13800,   498.8,    0.0 !  !END!
3059 ! X =   389.27800,   6957.13800,   496.3,    0.0 !  !END!
3060 ! X =   389.27800,   6957.13800,   496.3,    0.0 !  !END!
3061 ! X =   389.47800,   6957.13800,   500.8,    0.0 !  !END!
3062 ! X =   389.47800,   6957.13800,   500.8,    0.0 !  !END!
3063 ! X =   389.67800,   6957.13800,   500.0,    0.0 !  !END!
3064 ! X =   389.67800,   6957.13800,   500.0,    0.0 !  !END!
3065 ! X =   389.87800,   6957.13800,   496.0,    0.0 !  !END!
3066 ! X =   389.87800,   6957.13800,   496.0,    0.0 !  !END!
3067 ! X =   390.07800,   6957.13800,   496.9,    0.0 !  !END!
3068 ! X =   390.27800,   6957.13800,   509.1,    0.0 !  !END!
3069 ! X =   390.47800,   6957.13800,   525.7,    0.0 !  !END!
3070 ! X =   390.67800,   6957.13800,   537.4,    0.0 !  !END!
3071 ! X =   390.87800,   6957.13800,   530.7,    0.0 !  !END!
3072 ! X =   391.07800,   6957.13800,   517.4,    0.0 !  !END!
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3073 ! X = 392.47800, 6957.13800, 555.8, 0.0 ! !END!
3074 ! X = 392.67800, 6957.13800, 577.1, 0.0 ! !END!
3075 ! X = 392.87800, 6957.13800, 595.5, 0.0 ! !END!
3076 ! X = 402.47800, 6957.13800, 289.5, 0.0 ! !END!
3077 ! X = 402.67800, 6957.13800, 281.5, 0.0 ! !END!
3078 ! X = 402.87800, 6957.13800, 275.5, 0.0 ! !END!
3079 ! X = 403.07800, 6957.13800, 269.1, 0.0 ! !END!
3080 ! X = 405.87800, 6957.13800, 220.3, 0.0 ! !END!
3081 ! X = 405.87800, 6957.13800, 220.3, 0.0 ! !END!
3082 ! X = 406.07800, 6957.13800, 215.3, 0.0 ! !END!
3083 ! X = 406.07800, 6957.13800, 215.3, 0.0 ! !END!
3084 ! X = 406.27800, 6957.13800, 213.6, 0.0 ! !END!
3085 ! X = 387.27800, 6956.93800, 476.9, 0.0 ! !END!
3086 ! X = 387.47800, 6956.93800, 486.2, 0.0 ! !END!
3087 ! X = 387.67800, 6956.93800, 495.3, 0.0 ! !END!
3088 ! X = 387.87800, 6956.93800, 495.0, 0.0 ! !END!
3089 ! X = 388.07800, 6956.93800, 490.9, 0.0 ! !END!
3090 ! X = 388.27800, 6956.93800, 487.2, 0.0 ! !END!
3091 ! X = 388.47800, 6956.93800, 489.0, 0.0 ! !END!
3092 ! X = 388.67800, 6956.93800, 494.6, 0.0 ! !END!
3093 ! X = 388.87800, 6956.93800, 503.7, 0.0 ! !END!
3094 ! X = 388.87800, 6956.93800, 503.7, 0.0 ! !END!
3095 ! X = 389.07800, 6956.93800, 506.1, 0.0 ! !END!
3096 ! X = 389.07800, 6956.93800, 506.1, 0.0 ! !END!
3097 ! X = 389.27800, 6956.93800, 504.2, 0.0 ! !END!
3098 ! X = 389.27800, 6956.93800, 504.2, 0.0 ! !END!
3099 ! X = 389.47800, 6956.93800, 506.8, 0.0 ! !END!
3100 ! X = 389.47800, 6956.93800, 506.8, 0.0 ! !END!
3101 ! X = 389.67800, 6956.93800, 507.0, 0.0 ! !END!
3102 ! X = 389.67800, 6956.93800, 507.0, 0.0 ! !END!
3103 ! X = 389.87800, 6956.93800, 504.2, 0.0 ! !END!
3104 ! X = 390.07800, 6956.93800, 500.0, 0.0 ! !END!
3105 ! X = 390.27800, 6956.93800, 512.3, 0.0 ! !END!
3106 ! X = 390.47800, 6956.93800, 538.4, 0.0 ! !END!
3107 ! X = 390.67800, 6956.93800, 571.0, 0.0 ! !END!
3108 ! X = 390.87800, 6956.93800, 570.4, 0.0 ! !END!
3109 ! X = 391.07800, 6956.93800, 542.3, 0.0 ! !END!
3110 ! X = 391.27800, 6956.93800, 517.7, 0.0 ! !END!
3111 ! X = 392.47800, 6956.93800, 552.5, 0.0 ! !END!
3112 ! X = 392.67800, 6956.93800, 570.0, 0.0 ! !END!
3113 ! X = 399.07800, 6956.93800, 406.2, 0.0 ! !END!
3114 ! X = 399.27800, 6956.93800, 398.9, 0.0 ! !END!
3115 ! X = 399.47800, 6956.93800, 373.4, 0.0 ! !END!
3116 ! X = 399.67800, 6956.93800, 379.8, 0.0 ! !END!
3117 ! X = 399.87800, 6956.93800, 401.7, 0.0 ! !END!
3118 ! X = 400.07800, 6956.93800, 425.2, 0.0 ! !END!
3119 ! X = 402.47800, 6956.93800, 295.6, 0.0 ! !END!
3120 ! X = 402.67800, 6956.93800, 288.0, 0.0 ! !END!
3121 ! X = 402.87800, 6956.93800, 278.5, 0.0 ! !END!
3122 ! X = 406.07800, 6956.93800, 211.3, 0.0 ! !END!
3123 ! X = 406.07800, 6956.93800, 211.3, 0.0 ! !END!
3124 ! X = 406.27800, 6956.93800, 208.9, 0.0 ! !END!
3125 ! X = 406.47800, 6956.93800, 207.4, 0.0 ! !END!
3126 ! X = 406.67800, 6956.93800, 205.0, 0.0 ! !END!
3127 ! X = 390.87800, 6956.73800, 592.9, 0.0 ! !END!
3128 ! X = 391.07800, 6956.73800, 559.6, 0.0 ! !END!
3129 ! X = 391.27800, 6956.73800, 527.8, 0.0 ! !END!
3130 ! X = 391.47800, 6956.73800, 511.5, 0.0 ! !END!
3131 ! X = 391.67800, 6956.73800, 509.1, 0.0 ! !END!
3132 ! X = 392.27800, 6956.73800, 528.4, 0.0 ! !END!
3133 ! X = 392.47800, 6956.73800, 545.4, 0.0 ! !END!
3134 ! X = 392.67800, 6956.73800, 564.7, 0.0 ! !END!
3135 ! X = 398.67800, 6956.73800, 418.1, 0.0 ! !END!
3136 ! X = 398.87800, 6956.73800, 404.1, 0.0 ! !END!
3137 ! X = 399.07800, 6956.73800, 388.4, 0.0 ! !END!
3138 ! X = 399.27800, 6956.73800, 389.9, 0.0 ! !END!
3139 ! X = 399.47800, 6956.73800, 370.1, 0.0 ! !END!
3140 ! X = 399.67800, 6956.73800, 367.9, 0.0 ! !END!
3141 ! X = 399.87800, 6956.73800, 392.1, 0.0 ! !END!
3142 ! X = 400.07800, 6956.73800, 411.6, 0.0 ! !END!
3143 ! X = 400.27800, 6956.73800, 436.3, 0.0 ! !END!

3144 ! X = 400.47800, 6956.73800, 468.6, 0.0 ! !END!
3145 ! X = 400.87800, 6956.73800, 469.9, 0.0 ! !END!
3146 ! X = 401.07800, 6956.73800, 450.2, 0.0 ! !END!
3147 ! X = 401.27800, 6956.73800, 444.9, 0.0 ! !END!
3148 ! X = 401.27800, 6956.73800, 444.9, 0.0 ! !END!
3149 ! X = 401.47800, 6956.73800, 433.2, 0.0 ! !END!
3150 ! X = 401.47800, 6956.73800, 433.2, 0.0 ! !END!
3151 ! X = 401.67800, 6956.73800, 417.9, 0.0 ! !END!
3152 ! X = 401.67800, 6956.73800, 417.9, 0.0 ! !END!
3153 ! X = 401.87800, 6956.73800, 401.3, 0.0 ! !END!
3154 ! X = 401.87800, 6956.73800, 401.3, 0.0 ! !END!
3155 ! X = 402.07800, 6956.73800, 367.2, 0.0 ! !END!
3156 ! X = 402.07800, 6956.73800, 367.2, 0.0 ! !END!
3157 ! X = 402.27800, 6956.73800, 327.9, 0.0 ! !END!
3158 ! X = 402.27800, 6956.73800, 327.9, 0.0 ! !END!
3159 ! X = 402.47800, 6956.73800, 305.6, 0.0 ! !END!
3160 ! X = 402.67800, 6956.73800, 297.0, 0.0 ! !END!
3161 ! X = 406.27800, 6956.73800, 220.1, 0.0 ! !END!
3162 ! X = 406.47800, 6956.73800, 219.9, 0.0 ! !END!
3163 ! X = 406.67800, 6956.73800, 214.6, 0.0 ! !END!
3164 ! X = 406.87800, 6956.73800, 204.6, 0.0 ! !END!
3165 ! X = 391.27800, 6956.53800, 531.6, 0.0 ! !END!
3166 ! X = 391.47800, 6956.53800, 517.0, 0.0 ! !END!
3167 ! X = 391.67800, 6956.53800, 514.4, 0.0 ! !END!
3168 ! X = 391.87800, 6956.53800, 513.7, 0.0 ! !END!
3169 ! X = 392.07800, 6956.53800, 516.7, 0.0 ! !END!
3170 ! X = 392.27800, 6956.53800, 522.9, 0.0 ! !END!
3171 ! X = 392.47800, 6956.53800, 535.0, 0.0 ! !END!
3172 ! X = 392.67800, 6956.53800, 556.1, 0.0 ! !END!
3173 ! X = 398.27800, 6956.53800, 450.8, 0.0 ! !END!
3174 ! X = 398.47800, 6956.53800, 427.4, 0.0 ! !END!
3175 ! X = 398.67800, 6956.53800, 406.0, 0.0 ! !END!
3176 ! X = 398.87800, 6956.53800, 386.7, 0.0 ! !END!
3177 ! X = 399.07800, 6956.53800, 372.4, 0.0 ! !END!
3178 ! X = 399.27800, 6956.53800, 377.6, 0.0 ! !END!
3179 ! X = 399.87800, 6956.53800, 387.2, 0.0 ! !END!
3180 ! X = 400.07800, 6956.53800, 406.6, 0.0 ! !END!
3181 ! X = 400.27800, 6956.53800, 433.7, 0.0 ! !END!
3182 ! X = 400.47800, 6956.53800, 464.1, 0.0 ! !END!
3183 ! X = 400.67800, 6956.53800, 467.0, 0.0 ! !END!
3184 ! X = 400.87800, 6956.53800, 447.7, 0.0 ! !END!
3185 ! X = 401.07800, 6956.53800, 434.2, 0.0 ! !END!
3186 ! X = 401.07800, 6956.53800, 434.2, 0.0 ! !END!
3187 ! X = 401.27800, 6956.53800, 437.6, 0.0 ! !END!
3188 ! X = 401.27800, 6956.53800, 437.6, 0.0 ! !END!
3189 ! X = 401.47800, 6956.53800, 438.2, 0.0 ! !END!
3190 ! X = 401.47800, 6956.53800, 438.2, 0.0 ! !END!
3191 ! X = 401.67800, 6956.53800, 442.0, 0.0 ! !END!
3192 ! X = 401.67800, 6956.53800, 442.0, 0.0 ! !END!
3193 ! X = 401.87800, 6956.53800, 433.7, 0.0 ! !END!
3194 ! X = 401.87800, 6956.53800, 433.7, 0.0 ! !END!
3195 ! X = 402.07800, 6956.53800, 384.6, 0.0 ! !END!
3196 ! X = 402.07800, 6956.53800, 384.6, 0.0 ! !END!
3197 ! X = 402.27800, 6956.53800, 342.3, 0.0 ! !END!
3198 ! X = 402.27800, 6956.53800, 342.3, 0.0 ! !END!
3199 ! X = 402.47800, 6956.53800, 324.8, 0.0 ! !END!
3200 ! X = 402.47800, 6956.53800, 324.8, 0.0 ! !END!
3201 ! X = 404.07800, 6956.53800, 288.1, 0.0 ! !END!
3202 ! X = 404.27800, 6956.53800, 318.2, 0.0 ! !END!
3203 ! X = 404.27800, 6956.53800, 318.2, 0.0 ! !END!
3204 ! X = 404.47800, 6956.53800, 345.6, 0.0 ! !END!
3205 ! X = 404.47800, 6956.53800, 345.6, 0.0 ! !END!
3206 ! X = 404.67800, 6956.53800, 349.9, 0.0 ! !END!
3207 ! X = 404.67800, 6956.53800, 349.9, 0.0 ! !END!
3208 ! X = 404.87800, 6956.53800, 324.9, 0.0 ! !END!
3209 ! X = 404.87800, 6956.53800, 324.9, 0.0 ! !END!
3210 ! X = 406.47800, 6956.53800, 218.8, 0.0 ! !END!
3211 ! X = 406.67800, 6956.53800, 209.9, 0.0 ! !END!
3212 ! X = 406.87800, 6956.53800, 202.6, 0.0 ! !END!
3213 ! X = 407.07800, 6956.53800, 196.5, 0.0 ! !END!
3214 ! X = 407.27800, 6956.53800, 189.7, 0.0 ! !END!

3215 ! X = 408.67800, 6956.53800, 162.2, 0.0 ! !END!
3216 ! X = 408.87800, 6956.53800, 163.4, 0.0 ! !END!
3217 ! X = 409.07800, 6956.53800, 162.8, 0.0 ! !END!
3218 ! X = 391.47800, 6956.33800, 522.6, 0.0 ! !END!
3219 ! X = 391.67800, 6956.33800, 518.9, 0.0 ! !END!
3220 ! X = 391.87800, 6956.33800, 517.7, 0.0 ! !END!
3221 ! X = 392.07800, 6956.33800, 519.9, 0.0 ! !END!
3222 ! X = 392.27800, 6956.33800, 522.9, 0.0 ! !END!
3223 ! X = 397.67800, 6956.33800, 522.9, 0.0 ! !END!
3224 ! X = 397.87800, 6956.33800, 508.0, 0.0 ! !END!
3225 ! X = 398.07800, 6956.33800, 483.2, 0.0 ! !END!
3226 ! X = 398.27800, 6956.33800, 459.6, 0.0 ! !END!
3227 ! X = 398.47800, 6956.33800, 441.8, 0.0 ! !END!
3228 ! X = 398.67800, 6956.33800, 423.7, 0.0 ! !END!
3229 ! X = 400.27800, 6956.33800, 424.2, 0.0 ! !END!
3230 ! X = 400.47800, 6956.33800, 451.8, 0.0 ! !END!
3231 ! X = 400.67800, 6956.33800, 443.9, 0.0 ! !END!
3232 ! X = 400.87800, 6956.33800, 412.3, 0.0 ! !END!
3233 ! X = 400.87800, 6956.33800, 412.3, 0.0 ! !END!
3234 ! X = 402.07800, 6956.33800, 407.5, 0.0 ! !END!
3235 ! X = 402.07800, 6956.33800, 407.5, 0.0 ! !END!
3236 ! X = 402.27800, 6956.33800, 363.4, 0.0 ! !END!
3237 ! X = 402.27800, 6956.33800, 363.4, 0.0 ! !END!
3238 ! X = 402.47800, 6956.33800, 344.2, 0.0 ! !END!
3239 ! X = 402.47800, 6956.33800, 344.2, 0.0 ! !END!
3240 ! X = 403.87800, 6956.33800, 250.2, 0.0 ! !END!
3241 ! X = 404.07800, 6956.33800, 267.1, 0.0 ! !END!
3242 ! X = 404.27800, 6956.33800, 283.3, 0.0 ! !END!
3243 ! X = 404.47800, 6956.33800, 296.0, 0.0 ! !END!
3244 ! X = 404.47800, 6956.33800, 296.0, 0.0 ! !END!
3245 ! X = 404.67800, 6956.33800, 297.2, 0.0 ! !END!
3246 ! X = 404.67800, 6956.33800, 297.2, 0.0 ! !END!
3247 ! X = 404.87800, 6956.33800, 287.5, 0.0 ! !END!
3248 ! X = 404.87800, 6956.33800, 287.5, 0.0 ! !END!
3249 ! X = 405.07800, 6956.33800, 291.0, 0.0 ! !END!
3250 ! X = 405.07800, 6956.33800, 291.0, 0.0 ! !END!
3251 ! X = 406.87800, 6956.33800, 200.9, 0.0 ! !END!
3252 ! X = 407.07800, 6956.33800, 200.8, 0.0 ! !END!
3253 ! X = 407.27800, 6956.33800, 197.4, 0.0 ! !END!
3254 ! X = 407.47800, 6956.33800, 193.0, 0.0 ! !END!
3255 ! X = 407.67800, 6956.33800, 186.7, 0.0 ! !END!
3256 ! X = 407.87800, 6956.33800, 178.8, 0.0 ! !END!
3257 ! X = 408.07800, 6956.33800, 171.5, 0.0 ! !END!
3258 ! X = 408.07800, 6956.33800, 171.5, 0.0 ! !END!
3259 ! X = 408.27800, 6956.33800, 167.5, 0.0 ! !END!
3260 ! X = 408.27800, 6956.33800, 167.5, 0.0 ! !END!
3261 ! X = 408.47800, 6956.33800, 166.0, 0.0 ! !END!
3262 ! X = 408.47800, 6956.33800, 166.0, 0.0 ! !END!
3263 ! X = 408.67800, 6956.33800, 163.3, 0.0 ! !END!
3264 ! X = 408.67800, 6956.33800, 163.3, 0.0 ! !END!
3265 ! X = 408.87800, 6956.33800, 163.6, 0.0 ! !END!
3266 ! X = 408.87800, 6956.33800, 163.6, 0.0 ! !END!
3267 ! X = 409.07800, 6956.33800, 162.1, 0.0 ! !END!
3268 ! X = 409.07800, 6956.33800, 162.1, 0.0 ! !END!
3269 ! X = 409.27800, 6956.33800, 160.1, 0.0 ! !END!
3270 ! X = 409.47800, 6956.33800, 161.8, 0.0 ! !END!
3271 ! X = 409.67800, 6956.33800, 169.2, 0.0 ! !END!
3272 ! X = 397.27800, 6956.13800, 502.4, 0.0 ! !END!
3273 ! X = 397.47800, 6956.13800, 483.9, 0.0 ! !END!
3274 ! X = 397.67800, 6956.13800, 483.7, 0.0 ! !END!
3275 ! X = 397.87800, 6956.13800, 480.2, 0.0 ! !END!
3276 ! X = 398.07800, 6956.13800, 469.5, 0.0 ! !END!
3277 ! X = 398.27800, 6956.13800, 457.0, 0.0 ! !END!
3278 ! X = 403.67800, 6956.13800, 256.7, 0.0 ! !END!
3279 ! X = 403.87800, 6956.13800, 249.1, 0.0 ! !END!
3280 ! X = 404.07800, 6956.13800, 245.5, 0.0 ! !END!
3281 ! X = 404.27800, 6956.13800, 248.8, 0.0 ! !END!
3282 ! X = 404.67800, 6956.13800, 257.6, 0.0 ! !END!
3283 ! X = 404.87800, 6956.13800, 268.7, 0.0 ! !END!
3284 ! X = 404.87800, 6956.13800, 268.7, 0.0 ! !END!
3285 ! X = 405.07800, 6956.13800, 294.8, 0.0 ! !END!

3286 ! X = 405.07800, 6956.13800, 294.8, 0.0 ! !END!
3287 ! X = 407.07800, 6956.13800, 206.9, 0.0 ! !END!
3288 ! X = 407.27800, 6956.13800, 198.9, 0.0 ! !END!
3289 ! X = 407.47800, 6956.13800, 189.8, 0.0 ! !END!
3290 ! X = 407.67800, 6956.13800, 182.7, 0.0 ! !END!
3291 ! X = 407.87800, 6956.13800, 176.4, 0.0 ! !END!
3292 ! X = 407.87800, 6956.13800, 176.4, 0.0 ! !END!
3293 ! X = 408.07800, 6956.13800, 171.6, 0.0 ! !END!
3294 ! X = 408.07800, 6956.13800, 171.6, 0.0 ! !END!
3295 ! X = 408.27800, 6956.13800, 169.1, 0.0 ! !END!
3296 ! X = 408.27800, 6956.13800, 169.1, 0.0 ! !END!
3297 ! X = 408.47800, 6956.13800, 166.6, 0.0 ! !END!
3298 ! X = 408.47800, 6956.13800, 166.6, 0.0 ! !END!
3299 ! X = 408.67800, 6956.13800, 163.6, 0.0 ! !END!
3300 ! X = 408.67800, 6956.13800, 163.6, 0.0 ! !END!
3301 ! X = 408.87800, 6956.13800, 162.0, 0.0 ! !END!
3302 ! X = 408.87800, 6956.13800, 162.0, 0.0 ! !END!
3303 ! X = 409.07800, 6956.13800, 159.9, 0.0 ! !END!
3304 ! X = 409.07800, 6956.13800, 159.9, 0.0 ! !END!
3305 ! X = 409.27800, 6956.13800, 157.9, 0.0 ! !END!
3306 ! X = 409.27800, 6956.13800, 157.9, 0.0 ! !END!
3307 ! X = 409.47800, 6956.13800, 159.0, 0.0 ! !END!
3308 ! X = 409.67800, 6956.13800, 168.3, 0.0 ! !END!
3309 ! X = 409.87800, 6956.13800, 180.8, 0.0 ! !END!
3310 ! X = 397.27800, 6955.93800, 496.6, 0.0 ! !END!
3311 ! X = 397.47800, 6955.93800, 462.4, 0.0 ! !END!
3312 ! X = 397.67800, 6955.93800, 450.8, 0.0 ! !END!
3313 ! X = 403.47800, 6955.93800, 271.8, 0.0 ! !END!
3314 ! X = 403.67800, 6955.93800, 267.8, 0.0 ! !END!
3315 ! X = 403.87800, 6955.93800, 254.9, 0.0 ! !END!
3316 ! X = 404.87800, 6955.93800, 274.3, 0.0 ! !END!
3317 ! X = 405.07800, 6955.93800, 299.3, 0.0 ! !END!
3318 ! X = 405.27800, 6955.93800, 283.2, 0.0 ! !END!
3319 ! X = 405.47800, 6955.93800, 257.7, 0.0 ! !END!
3320 ! X = 407.47800, 6955.93800, 189.5, 0.0 ! !END!
3321 ! X = 407.67800, 6955.93800, 183.9, 0.0 ! !END!
3322 ! X = 407.67800, 6955.93800, 183.9, 0.0 ! !END!
3323 ! X = 407.87800, 6955.93800, 179.4, 0.0 ! !END!
3324 ! X = 407.87800, 6955.93800, 179.4, 0.0 ! !END!
3325 ! X = 409.47800, 6955.93800, 157.4, 0.0 ! !END!
3326 ! X = 409.67800, 6955.93800, 163.3, 0.0 ! !END!
3327 ! X = 409.87800, 6955.93800, 172.2, 0.0 ! !END!
3328 ! X = 410.07800, 6955.93800, 180.1, 0.0 ! !END!
3329 ! X = 397.07800, 6955.73800, 560.5, 0.0 ! !END!
3330 ! X = 397.27800, 6955.73800, 511.0, 0.0 ! !END!
3331 ! X = 397.47800, 6955.73800, 468.0, 0.0 ! !END!
3332 ! X = 403.47800, 6955.73800, 277.6, 0.0 ! !END!
3333 ! X = 403.67800, 6955.73800, 266.2, 0.0 ! !END!
3334 ! X = 403.87800, 6955.73800, 255.3, 0.0 ! !END!
3335 ! X = 405.07800, 6955.73800, 289.3, 0.0 ! !END!
3336 ! X = 405.27800, 6955.73800, 263.8, 0.0 ! !END!
3337 ! X = 405.47800, 6955.73800, 242.2, 0.0 ! !END!
3338 ! X = 405.67800, 6955.73800, 240.1, 0.0 ! !END!
3339 ! X = 409.87800, 6955.73800, 167.0, 0.0 ! !END!
3340 ! X = 410.07800, 6955.73800, 174.3, 0.0 ! !END!
3341 ! X = 410.27800, 6955.73800, 181.7, 0.0 ! !END!
3342 ! X = 397.07800, 6955.53800, 586.1, 0.0 ! !END!
3343 ! X = 397.27800, 6955.53800, 528.1, 0.0 ! !END!
3344 ! X = 397.47800, 6955.53800, 486.6, 0.0 ! !END!
3345 ! X = 399.47800, 6955.53800, 337.9, 0.0 ! !END!
3346 ! X = 403.27800, 6955.53800, 286.6, 0.0 ! !END!
3347 ! X = 403.47800, 6955.53800, 283.2, 0.0 ! !END!
3348 ! X = 403.67800, 6955.53800, 272.8, 0.0 ! !END!
3349 ! X = 405.27800, 6955.53800, 249.7, 0.0 ! !END!
3350 ! X = 405.47800, 6955.53800, 229.5, 0.0 ! !END!
3351 ! X = 405.67800, 6955.53800, 225.0, 0.0 ! !END!
3352 ! X = 405.87800, 6955.53800, 222.7, 0.0 ! !END!
3353 ! X = 406.07800, 6955.53800, 225.3, 0.0 ! !END!
3354 ! X = 409.87800, 6955.53800, 166.3, 0.0 ! !END!
3355 ! X = 410.07800, 6955.53800, 167.5, 0.0 ! !END!
3356 ! X = 410.27800, 6955.53800, 168.9, 0.0 ! !END!

3357 ! X = 410.47800, 6955.53800, 168.7, 0.0 ! !END!
3358 ! X = 397.07800, 6955.33800, 609.9, 0.0 ! !END!
3359 ! X = 397.27800, 6955.33800, 564.1, 0.0 ! !END!
3360 ! X = 397.47800, 6955.33800, 524.8, 0.0 ! !END!
3361 ! X = 399.27800, 6955.33800, 375.1, 0.0 ! !END!
3362 ! X = 399.47800, 6955.33800, 363.5, 0.0 ! !END!
3363 ! X = 399.67800, 6955.33800, 345.3, 0.0 ! !END!
3364 ! X = 399.87800, 6955.33800, 327.1, 0.0 ! !END!
3365 ! X = 401.27800, 6955.33800, 283.8, 0.0 ! !END!
3366 ! X = 401.27800, 6955.33800, 283.8, 0.0 ! !END!
3367 ! X = 401.47800, 6955.33800, 279.2, 0.0 ! !END!
3368 ! X = 401.47800, 6955.33800, 279.2, 0.0 ! !END!
3369 ! X = 401.67800, 6955.33800, 277.6, 0.0 ! !END!
3370 ! X = 401.67800, 6955.33800, 277.6, 0.0 ! !END!
3371 ! X = 402.87800, 6955.33800, 286.6, 0.0 ! !END!
3372 ! X = 403.07800, 6955.33800, 277.7, 0.0 ! !END!
3373 ! X = 403.27800, 6955.33800, 277.1, 0.0 ! !END!
3374 ! X = 403.47800, 6955.33800, 282.2, 0.0 ! !END!
3375 ! X = 405.47800, 6955.33800, 219.7, 0.0 ! !END!
3376 ! X = 405.67800, 6955.33800, 214.6, 0.0 ! !END!
3377 ! X = 405.87800, 6955.33800, 213.7, 0.0 ! !END!
3378 ! X = 406.07800, 6955.33800, 211.6, 0.0 ! !END!
3379 ! X = 406.27800, 6955.33800, 215.2, 0.0 ! !END!
3380 ! X = 410.07800, 6955.33800, 165.0, 0.0 ! !END!
3381 ! X = 410.27800, 6955.33800, 165.2, 0.0 ! !END!
3382 ! X = 410.47800, 6955.33800, 163.7, 0.0 ! !END!
3383 ! X = 397.27800, 6955.13800, 612.2, 0.0 ! !END!
3384 ! X = 397.47800, 6955.13800, 578.9, 0.0 ! !END!
3385 ! X = 397.67800, 6955.13800, 543.8, 0.0 ! !END!
3386 ! X = 398.87800, 6955.13800, 398.6, 0.0 ! !END!
3387 ! X = 399.07800, 6955.13800, 403.5, 0.0 ! !END!
3388 ! X = 399.27800, 6955.13800, 414.9, 0.0 ! !END!
3389 ! X = 399.47800, 6955.13800, 397.3, 0.0 ! !END!
3390 ! X = 399.67800, 6955.13800, 370.7, 0.0 ! !END!
3391 ! X = 399.87800, 6955.13800, 351.4, 0.0 ! !END!
3392 ! X = 400.07800, 6955.13800, 335.0, 0.0 ! !END!
3393 ! X = 400.27800, 6955.13800, 321.8, 0.0 ! !END!
3394 ! X = 400.47800, 6955.13800, 312.5, 0.0 ! !END!
3395 ! X = 400.67800, 6955.13800, 305.8, 0.0 ! !END!
3396 ! X = 400.87800, 6955.13800, 299.5, 0.0 ! !END!
3397 ! X = 401.07800, 6955.13800, 293.7, 0.0 ! !END!
3398 ! X = 401.27800, 6955.13800, 286.9, 0.0 ! !END!
3399 ! X = 401.27800, 6955.13800, 286.9, 0.0 ! !END!
3400 ! X = 401.47800, 6955.13800, 281.6, 0.0 ! !END!
3401 ! X = 401.47800, 6955.13800, 281.6, 0.0 ! !END!
3402 ! X = 401.67800, 6955.13800, 276.6, 0.0 ! !END!
3403 ! X = 401.67800, 6955.13800, 276.6, 0.0 ! !END!
3404 ! X = 401.87800, 6955.13800, 273.4, 0.0 ! !END!
3405 ! X = 401.87800, 6955.13800, 273.4, 0.0 ! !END!
3406 ! X = 402.07800, 6955.13800, 271.5, 0.0 ! !END!
3407 ! X = 402.07800, 6955.13800, 271.5, 0.0 ! !END!
3408 ! X = 402.27800, 6955.13800, 273.3, 0.0 ! !END!
3409 ! X = 402.27800, 6955.13800, 273.3, 0.0 ! !END!
3410 ! X = 402.47800, 6955.13800, 273.0, 0.0 ! !END!
3411 ! X = 402.67800, 6955.13800, 279.1, 0.0 ! !END!
3412 ! X = 402.87800, 6955.13800, 280.1, 0.0 ! !END!
3413 ! X = 403.07800, 6955.13800, 271.6, 0.0 ! !END!
3414 ! X = 403.27800, 6955.13800, 264.6, 0.0 ! !END!
3415 ! X = 405.87800, 6955.13800, 213.2, 0.0 ! !END!
3416 ! X = 406.07800, 6955.13800, 209.0, 0.0 ! !END!
3417 ! X = 406.27800, 6955.13800, 204.7, 0.0 ! !END!
3418 ! X = 406.47800, 6955.13800, 203.4, 0.0 ! !END!
3419 ! X = 406.67800, 6955.13800, 202.9, 0.0 ! !END!
3420 ! X = 410.27800, 6955.13800, 171.1, 0.0 ! !END!
3421 ! X = 410.47800, 6955.13800, 164.9, 0.0 ! !END!
3422 ! X = 410.67800, 6955.13800, 171.0, 0.0 ! !END!
3423 ! X = 410.87800, 6955.13800, 175.4, 0.0 ! !END!
3424 ! X = 397.27800, 6954.93800, 623.5, 0.0 ! !END!
3425 ! X = 397.47800, 6954.93800, 589.4, 0.0 ! !END!
3426 ! X = 397.67800, 6954.93800, 539.6, 0.0 ! !END!
3427 ! X = 397.87800, 6954.93800, 484.8, 0.0 ! !END!

3428 ! X = 398.07800, 6954.93800, 453.6, 0.0 ! !END!
3429 ! X = 398.27800, 6954.93800, 436.4, 0.0 ! !END!
3430 ! X = 398.47800, 6954.93800, 429.6, 0.0 ! !END!
3431 ! X = 398.67800, 6954.93800, 422.2, 0.0 ! !END!
3432 ! X = 398.87800, 6954.93800, 429.3, 0.0 ! !END!
3433 ! X = 399.07800, 6954.93800, 438.9, 0.0 ! !END!
3434 ! X = 399.27800, 6954.93800, 446.4, 0.0 ! !END!
3435 ! X = 399.67800, 6954.93800, 398.9, 0.0 ! !END!
3436 ! X = 399.87800, 6954.93800, 375.8, 0.0 ! !END!
3437 ! X = 400.07800, 6954.93800, 351.5, 0.0 ! !END!
3438 ! X = 400.27800, 6954.93800, 333.2, 0.0 ! !END!
3439 ! X = 400.47800, 6954.93800, 327.2, 0.0 ! !END!
3440 ! X = 400.67800, 6954.93800, 315.5, 0.0 ! !END!
3441 ! X = 400.87800, 6954.93800, 308.1, 0.0 ! !END!
3442 ! X = 401.07800, 6954.93800, 303.8, 0.0 ! !END!
3443 ! X = 401.27800, 6954.93800, 296.1, 0.0 ! !END!
3444 ! X = 401.47800, 6954.93800, 288.6, 0.0 ! !END!
3445 ! X = 401.67800, 6954.93800, 280.9, 0.0 ! !END!
3446 ! X = 401.67800, 6954.93800, 280.9, 0.0 ! !END!
3447 ! X = 401.87800, 6954.93800, 276.5, 0.0 ! !END!
3448 ! X = 401.87800, 6954.93800, 276.5, 0.0 ! !END!
3449 ! X = 402.07800, 6954.93800, 274.3, 0.0 ! !END!
3450 ! X = 402.27800, 6954.93800, 267.3, 0.0 ! !END!
3451 ! X = 402.47800, 6954.93800, 262.6, 0.0 ! !END!
3452 ! X = 402.67800, 6954.93800, 262.9, 0.0 ! !END!
3453 ! X = 402.87800, 6954.93800, 262.4, 0.0 ! !END!
3454 ! X = 403.07800, 6954.93800, 259.3, 0.0 ! !END!
3455 ! X = 406.27800, 6954.93800, 208.1, 0.0 ! !END!
3456 ! X = 406.47800, 6954.93800, 203.9, 0.0 ! !END!
3457 ! X = 406.67800, 6954.93800, 200.5, 0.0 ! !END!
3458 ! X = 406.87800, 6954.93800, 197.1, 0.0 ! !END!
3459 ! X = 407.07800, 6954.93800, 195.1, 0.0 ! !END!
3460 ! X = 407.27800, 6954.93800, 194.0, 0.0 ! !END!
3461 ! X = 408.07800, 6954.93800, 194.8, 0.0 ! !END!
3462 ! X = 408.07800, 6954.93800, 194.8, 0.0 ! !END!
3463 ! X = 408.27800, 6954.93800, 189.5, 0.0 ! !END!
3464 ! X = 408.27800, 6954.93800, 189.5, 0.0 ! !END!
3465 ! X = 408.47800, 6954.93800, 189.5, 0.0 ! !END!
3466 ! X = 408.47800, 6954.93800, 189.5, 0.0 ! !END!
3467 ! X = 408.67800, 6954.93800, 191.8, 0.0 ! !END!
3468 ! X = 408.67800, 6954.93800, 191.8, 0.0 ! !END!
3469 ! X = 408.87800, 6954.93800, 190.7, 0.0 ! !END!
3470 ! X = 408.87800, 6954.93800, 190.7, 0.0 ! !END!
3471 ! X = 410.47800, 6954.93800, 166.6, 0.0 ! !END!
3472 ! X = 410.67800, 6954.93800, 165.7, 0.0 ! !END!
3473 ! X = 410.87800, 6954.93800, 168.3, 0.0 ! !END!
3474 ! X = 411.07800, 6954.93800, 171.7, 0.0 ! !END!
3475 ! X = 411.27800, 6954.93800, 178.2, 0.0 ! !END!
3476 ! X = 411.47800, 6954.93800, 184.8, 0.0 ! !END!
3477 ! X = 397.47800, 6954.73800, 585.6, 0.0 ! !END!
3478 ! X = 397.67800, 6954.73800, 550.2, 0.0 ! !END!
3479 ! X = 397.87800, 6954.73800, 531.7, 0.0 ! !END!
3480 ! X = 398.07800, 6954.73800, 505.4, 0.0 ! !END!
3481 ! X = 398.27800, 6954.73800, 469.9, 0.0 ! !END!
3482 ! X = 398.47800, 6954.73800, 463.0, 0.0 ! !END!
3483 ! X = 398.67800, 6954.73800, 451.2, 0.0 ! !END!
3484 ! X = 398.87800, 6954.73800, 466.5, 0.0 ! !END!
3485 ! X = 400.27800, 6954.73800, 350.6, 0.0 ! !END!
3486 ! X = 400.47800, 6954.73800, 341.6, 0.0 ! !END!
3487 ! X = 400.67800, 6954.73800, 334.0, 0.0 ! !END!
3488 ! X = 400.87800, 6954.73800, 329.8, 0.0 ! !END!
3489 ! X = 401.07800, 6954.73800, 323.0, 0.0 ! !END!
3490 ! X = 406.47800, 6954.73800, 208.9, 0.0 ! !END!
3491 ! X = 406.67800, 6954.73800, 205.2, 0.0 ! !END!
3492 ! X = 406.87800, 6954.73800, 200.8, 0.0 ! !END!
3493 ! X = 407.07800, 6954.73800, 196.5, 0.0 ! !END!
3494 ! X = 407.27800, 6954.73800, 192.9, 0.0 ! !END!
3495 ! X = 407.47800, 6954.73800, 190.4, 0.0 ! !END!
3496 ! X = 407.67800, 6954.73800, 190.5, 0.0 ! !END!
3497 ! X = 407.87800, 6954.73800, 198.2, 0.0 ! !END!
3498 ! X = 408.07800, 6954.73800, 199.6, 0.0 ! !END!

3499 ! X = 408.07800, 6954.73800, 199.6, 0.0 ! !END!
3500 ! X = 408.27800, 6954.73800, 190.6, 0.0 ! !END!
3501 ! X = 408.27800, 6954.73800, 190.6, 0.0 ! !END!
3502 ! X = 408.47800, 6954.73800, 185.7, 0.0 ! !END!
3503 ! X = 408.47800, 6954.73800, 185.7, 0.0 ! !END!
3504 ! X = 408.67800, 6954.73800, 184.7, 0.0 ! !END!
3505 ! X = 408.67800, 6954.73800, 184.7, 0.0 ! !END!
3506 ! X = 408.87800, 6954.73800, 186.6, 0.0 ! !END!
3507 ! X = 408.87800, 6954.73800, 186.6, 0.0 ! !END!
3508 ! X = 409.07800, 6954.73800, 189.6, 0.0 ! !END!
3509 ! X = 409.07800, 6954.73800, 189.6, 0.0 ! !END!
3510 ! X = 410.67800, 6954.73800, 160.7, 0.0 ! !END!
3511 ! X = 410.87800, 6954.73800, 164.4, 0.0 ! !END!
3512 ! X = 411.07800, 6954.73800, 172.6, 0.0 ! !END!
3513 ! X = 411.27800, 6954.73800, 178.5, 0.0 ! !END!
3514 ! X = 411.47800, 6954.73800, 181.8, 0.0 ! !END!
3515 ! X = 411.67800, 6954.73800, 183.3, 0.0 ! !END!
3516 ! X = 411.87800, 6954.73800, 180.5, 0.0 ! !END!
3517 ! X = 412.07800, 6954.73800, 171.5, 0.0 ! !END!
3518 ! X = 412.27800, 6954.73800, 162.0, 0.0 ! !END!
3519 ! X = 397.87800, 6954.53800, 594.0, 0.0 ! !END!
3520 ! X = 398.07800, 6954.53800, 572.3, 0.0 ! !END!
3521 ! X = 398.27800, 6954.53800, 522.6, 0.0 ! !END!
3522 ! X = 398.47800, 6954.53800, 512.0, 0.0 ! !END!
3523 ! X = 407.07800, 6954.53800, 199.6, 0.0 ! !END!
3524 ! X = 407.27800, 6954.53800, 195.6, 0.0 ! !END!
3525 ! X = 407.47800, 6954.53800, 191.8, 0.0 ! !END!
3526 ! X = 407.67800, 6954.53800, 186.7, 0.0 ! !END!
3527 ! X = 407.87800, 6954.53800, 189.9, 0.0 ! !END!
3528 ! X = 408.07800, 6954.53800, 193.9, 0.0 ! !END!
3529 ! X = 408.27800, 6954.53800, 184.7, 0.0 ! !END!
3530 ! X = 408.47800, 6954.53800, 177.5, 0.0 ! !END!
3531 ! X = 408.67800, 6954.53800, 175.5, 0.0 ! !END!
3532 ! X = 408.87800, 6954.53800, 176.8, 0.0 ! !END!
3533 ! X = 409.07800, 6954.53800, 183.9, 0.0 ! !END!
3534 ! X = 409.27800, 6954.53800, 184.9, 0.0 ! !END!
3535 ! X = 411.07800, 6954.53800, 172.0, 0.0 ! !END!
3536 ! X = 411.27800, 6954.53800, 173.7, 0.0 ! !END!
3537 ! X = 411.47800, 6954.53800, 173.2, 0.0 ! !END!
3538 ! X = 411.67800, 6954.53800, 174.8, 0.0 ! !END!
3539 ! X = 411.87800, 6954.53800, 174.0, 0.0 ! !END!
3540 ! X = 412.07800, 6954.53800, 168.2, 0.0 ! !END!
3541 ! X = 412.27800, 6954.53800, 155.7, 0.0 ! !END!
3542 ! X = 412.47800, 6954.53800, 155.7, 0.0 ! !END!
3543 ! X = 409.07800, 6954.33800, 173.9, 0.0 ! !END!
3544 ! X = 409.27800, 6954.33800, 175.8, 0.0 ! !END!
3545 ! X = 409.47800, 6954.33800, 177.1, 0.0 ! !END!
3546 ! X = 412.07800, 6954.33800, 166.8, 0.0 ! !END!
3547 ! X = 412.27800, 6954.33800, 153.7, 0.0 ! !END!
3548 ! X = 412.47800, 6954.33800, 149.1, 0.0 ! !END!
3549 ! X = 412.67800, 6954.33800, 151.4, 0.0 ! !END!
3550 ! X = 409.07800, 6954.13800, 170.6, 0.0 ! !END!
3551 ! X = 409.27800, 6954.13800, 171.0, 0.0 ! !END!
3552 ! X = 409.47800, 6954.13800, 174.7, 0.0 ! !END!
3553 ! X = 409.67800, 6954.13800, 180.5, 0.0 ! !END!
3554 ! X = 412.47800, 6954.13800, 147.0, 0.0 ! !END!
3555 ! X = 412.67800, 6954.13800, 148.6, 0.0 ! !END!
3556 ! X = 409.27800, 6953.93800, 171.1, 0.0 ! !END!
3557 ! X = 409.47800, 6953.93800, 172.1, 0.0 ! !END!
3558 ! X = 409.67800, 6953.93800, 178.8, 0.0 ! !END!
3559 ! X = 409.87800, 6953.93800, 180.7, 0.0 ! !END!
3560 ! X = 412.47800, 6953.93800, 145.7, 0.0 ! !END!
3561 ! X = 412.67800, 6953.93800, 146.4, 0.0 ! !END!
3562 ! X = 412.87800, 6953.93800, 152.3, 0.0 ! !END!
3563 ! X = 409.47800, 6953.73800, 169.1, 0.0 ! !END!
3564 ! X = 409.67800, 6953.73800, 172.3, 0.0 ! !END!
3565 ! X = 409.87800, 6953.73800, 176.8, 0.0 ! !END!
3566 ! X = 410.07800, 6953.73800, 176.9, 0.0 ! !END!
3567 ! X = 410.27800, 6953.73800, 169.5, 0.0 ! !END!
3568 ! X = 412.47800, 6953.73800, 143.9, 0.0 ! !END!
3569 ! X = 412.67800, 6953.73800, 144.0, 0.0 ! !END!

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3570 ! X =   412.87800,  6953.73800,  146.9,    0.0 !  !END!
3571 ! X =   409.87800,  6953.53800,  170.7,    0.0 !  !END!
3572 ! X =   410.07800,  6953.53800,  175.0,    0.0 !  !END!
3573 ! X =   410.27800,  6953.53800,  171.4,    0.0 !  !END!
3574 ! X =   410.47800,  6953.53800,  157.9,    0.0 !  !END!
3575 ! X =   410.67800,  6953.53800,  150.1,    0.0 !  !END!
3576 ! X =   410.87800,  6953.53800,  162.2,    0.0 !  !END!
3577 ! X =   412.47800,  6953.53800,  140.1,    0.0 !  !END!
3578 ! X =   412.67800,  6953.53800,  143.3,    0.0 !  !END!
3579 ! X =   410.07800,  6953.33800,  169.6,    0.0 !  !END!
3580 ! X =   410.27800,  6953.33800,  172.0,    0.0 !  !END!
3581 ! X =   410.47800,  6953.33800,  166.9,    0.0 !  !END!
3582 ! X =   410.67800,  6953.33800,  159.8,    0.0 !  !END!
3583 ! X =   410.87800,  6953.33800,  165.1,    0.0 !  !END!
3584 ! X =   411.07800,  6953.33800,  167.0,    0.0 !  !END!
3585 ! X =   411.27800,  6953.33800,  158.4,    0.0 !  !END!
3586 ! X =   411.47800,  6953.33800,  149.6,    0.0 !  !END!
3587 ! X =   411.67800,  6953.33800,  146.4,    0.0 !  !END!
3588 ! X =   411.87800,  6953.33800,  144.7,    0.0 !  !END!
3589 ! X =   412.07800,  6953.33800,  143.0,    0.0 !  !END!
3590 ! X =   412.27800,  6953.33800,  142.4,    0.0 !  !END!
3591 ! X =   412.47800,  6953.33800,  141.0,    0.0 !  !END!
3592 ! X =   412.67800,  6953.33800,  142.8,    0.0 !  !END!
3593 ! X =   410.47800,  6953.13800,  161.9,    0.0 !  !END!
3594 ! X =   410.67800,  6953.13800,  158.8,    0.0 !  !END!
3595 ! X =   410.87800,  6953.13800,  159.7,    0.0 !  !END!
3596 ! X =   411.07800,  6953.13800,  161.1,    0.0 !  !END!
3597 ! X =   411.27800,  6953.13800,  152.5,    0.0 !  !END!
3598 ! X =   411.47800,  6953.13800,  147.4,    0.0 !  !END!
3599 ! X =   411.67800,  6953.13800,  145.9,    0.0 !  !END!
3600 ! X =   411.87800,  6953.13800,  145.1,    0.0 !  !END!
3601 ! X =   412.07800,  6953.13800,  144.6,    0.0 !  !END!
3602 ! X =   412.27800,  6953.13800,  143.9,    0.0 !  !END!
3603 ! X =   412.47800,  6953.13800,  142.7,    0.0 !  !END!
3604 ! X =   411.47800,  6952.93800,  146.8,    0.0 !  !END!
3605 ! X =   411.67800,  6952.93800,  145.9,    0.0 !  !END!
3606 ! X =   411.87800,  6952.93800,  145.3,    0.0 !  !END!
3607 ! X =   412.07800,  6952.93800,  145.1,    0.0 !  !END!
3608 ! X =   412.27800,  6952.93800,  143.5,    0.0 !  !END!
3609 ! X =   385.07800,  6959.73800,  554.3,    0.0 !  !END!
3610 ! X =   385.47800,  6959.73800,  520.6,    0.0 !  !END!
3611 ! X =   385.87800,  6959.73800,  507.2,    0.0 !  !END!
3612 ! X =   386.27800,  6959.73800,  547.4,    0.0 !  !END!
3613 ! X =   386.67800,  6959.73800,  571.9,    0.0 !  !END!
3614 ! X =   387.07800,  6959.73800,  543.7,    0.0 !  !END!
3615 ! X =   387.47800,  6959.73800,  528.1,    0.0 !  !END!
3616 ! X =   387.87800,  6959.73800,  611.2,    0.0 !  !END!
3617 ! X =   388.27800,  6959.73800,  631.5,    0.0 !  !END!
3618 ! X =   388.67800,  6959.73800,  592.3,    0.0 !  !END!
3619 ! X =   389.07800,  6959.73800,  557.7,    0.0 !  !END!
3620 ! X =   389.07800,  6959.73800,  557.7,    0.0 !  !END!
3621 ! X =   389.47800,  6959.73800,  527.0,    0.0 !  !END!
3622 ! X =   389.47800,  6959.73800,  527.0,    0.0 !  !END!
3623 ! X =   389.87800,  6959.73800,  522.7,    0.0 !  !END!
3624 ! X =   390.27800,  6959.73800,  554.7,    0.0 !  !END!
3625 ! X =   390.67800,  6959.73800,  573.5,    0.0 !  !END!
3626 ! X =   391.07800,  6959.73800,  561.8,    0.0 !  !END!
3627 ! X =   385.07800,  6959.33800,  479.9,    0.0 !  !END!
3628 ! X =   385.47800,  6959.33800,  472.2,    0.0 !  !END!
3629 ! X =   385.87800,  6959.33800,  473.7,    0.0 !  !END!
3630 ! X =   386.27800,  6959.33800,  484.4,    0.0 !  !END!
3631 ! X =   386.67800,  6959.33800,  499.1,    0.0 !  !END!
3632 ! X =   387.07800,  6959.33800,  494.8,    0.0 !  !END!
3633 ! X =   387.47800,  6959.33800,  514.7,    0.0 !  !END!
3634 ! X =   387.87800,  6959.33800,  569.0,    0.0 !  !END!
3635 ! X =   388.27800,  6959.33800,  574.3,    0.0 !  !END!
3636 ! X =   388.27800,  6959.33800,  574.3,    0.0 !  !END!
3637 ! X =   388.67800,  6959.33800,  565.9,    0.0 !  !END!
3638 ! X =   388.67800,  6959.33800,  565.9,    0.0 !  !END!
3639 ! X =   389.07800,  6959.33800,  564.1,    0.0 !  !END!
3640 ! X =   389.07800,  6959.33800,  564.1,    0.0 !  !END!
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3641 ! X =   389.47800,  6959.33800,  545.2,   0.0 !  !END!
3642 ! X =   389.47800,  6959.33800,  545.2,   0.0 !  !END!
3643 ! X =   389.87800,  6959.33800,  505.7,   0.0 !  !END!
3644 ! X =   389.87800,  6959.33800,  505.7,   0.0 !  !END!
3645 ! X =   390.27800,  6959.33800,  548.3,   0.0 !  !END!
3646 ! X =   390.27800,  6959.33800,  548.3,   0.0 !  !END!
3647 ! X =   390.67800,  6959.33800,  546.0,   0.0 !  !END!
3648 ! X =   391.07800,  6959.33800,  555.2,   0.0 !  !END!
3649 ! X =   391.47800,  6959.33800,  538.7,   0.0 !  !END!
3650 ! X =   391.87800,  6959.33800,  512.7,   0.0 !  !END!
3651 ! X =   392.27800,  6959.33800,  519.4,   0.0 !  !END!
3652 ! X =   384.67800,  6958.93800,  454.3,   0.0 !  !END!
3653 ! X =   385.07800,  6958.93800,  455.2,   0.0 !  !END!
3654 ! X =   385.47800,  6958.93800,  453.7,   0.0 !  !END!
3655 ! X =   387.47800,  6958.93800,  493.8,   0.0 !  !END!
3656 ! X =   387.87800,  6958.93800,  501.9,   0.0 !  !END!
3657 ! X =   387.87800,  6958.93800,  501.9,   0.0 !  !END!
3658 ! X =   388.27800,  6958.93800,  506.1,   0.0 !  !END!
3659 ! X =   388.27800,  6958.93800,  506.1,   0.0 !  !END!
3660 ! X =   388.67800,  6958.93800,  506.8,   0.0 !  !END!
3661 ! X =   388.67800,  6958.93800,  506.8,   0.0 !  !END!
3662 ! X =   389.07800,  6958.93800,  513.8,   0.0 !  !END!
3663 ! X =   389.07800,  6958.93800,  513.8,   0.0 !  !END!
3664 ! X =   389.47800,  6958.93800,  539.8,   0.0 !  !END!
3665 ! X =   389.47800,  6958.93800,  539.8,   0.0 !  !END!
3666 ! X =   389.87800,  6958.93800,  503.7,   0.0 !  !END!
3667 ! X =   389.87800,  6958.93800,  503.7,   0.0 !  !END!
3668 ! X =   390.27800,  6958.93800,  501.9,   0.0 !  !END!
3669 ! X =   390.27800,  6958.93800,  501.9,   0.0 !  !END!
3670 ! X =   390.67800,  6958.93800,  521.7,   0.0 !  !END!
3671 ! X =   390.67800,  6958.93800,  521.7,   0.0 !  !END!
3672 ! X =   391.07800,  6958.93800,  551.3,   0.0 !  !END!
3673 ! X =   391.47800,  6958.93800,  530.3,   0.0 !  !END!
3674 ! X =   391.87800,  6958.93800,  510.0,   0.0 !  !END!
3675 ! X =   392.27800,  6958.93800,  501.6,   0.0 !  !END!
3676 ! X =   392.67800,  6958.93800,  503.8,   0.0 !  !END!
3677 ! X =   403.47800,  6958.93800,  396.5,   0.0 !  !END!
3678 ! X =   403.87800,  6958.93800,  411.9,   0.0 !  !END!
3679 ! X =   404.27800,  6958.93800,  424.9,   0.0 !  !END!
3680 ! X =   404.67800,  6958.93800,  376.3,   0.0 !  !END!
3681 ! X =   404.67800,  6958.93800,  376.3,   0.0 !  !END!
3682 ! X =   405.07800,  6958.93800,  326.0,   0.0 !  !END!
3683 ! X =   405.07800,  6958.93800,  326.0,   0.0 !  !END!
3684 ! X =   405.47800,  6958.93800,  263.9,   0.0 !  !END!
3685 ! X =   405.47800,  6958.93800,  263.9,   0.0 !  !END!
3686 ! X =   384.67800,  6958.53800,  444.9,   0.0 !  !END!
3687 ! X =   385.07800,  6958.53800,  446.2,   0.0 !  !END!
3688 ! X =   391.87800,  6958.53800,  494.7,   0.0 !  !END!
3689 ! X =   392.27800,  6958.53800,  497.4,   0.0 !  !END!
3690 ! X =   392.67800,  6958.53800,  503.3,   0.0 !  !END!
3691 ! X =   393.07800,  6958.53800,  509.1,   0.0 !  !END!
3692 ! X =   402.67800,  6958.53800,  435.3,   0.0 !  !END!
3693 ! X =   403.07800,  6958.53800,  392.5,   0.0 !  !END!
3694 ! X =   403.47800,  6958.53800,  362.6,   0.0 !  !END!
3695 ! X =   403.87800,  6958.53800,  384.4,   0.0 !  !END!
3696 ! X =   403.87800,  6958.53800,  384.4,   0.0 !  !END!
3697 ! X =   404.27800,  6958.53800,  393.8,   0.0 !  !END!
3698 ! X =   404.27800,  6958.53800,  393.8,   0.0 !  !END!
3699 ! X =   404.67800,  6958.53800,  364.3,   0.0 !  !END!
3700 ! X =   404.67800,  6958.53800,  364.3,   0.0 !  !END!
3701 ! X =   405.07800,  6958.53800,  332.6,   0.0 !  !END!
3702 ! X =   405.07800,  6958.53800,  332.6,   0.0 !  !END!
3703 ! X =   405.47800,  6958.53800,  268.3,   0.0 !  !END!
3704 ! X =   405.47800,  6958.53800,  268.3,   0.0 !  !END!
3705 ! X =   405.87800,  6958.53800,  246.8,   0.0 !  !END!
3706 ! X =   405.87800,  6958.53800,  246.8,   0.0 !  !END!
3707 ! X =   406.27800,  6958.53800,  227.8,   0.0 !  !END!
3708 ! X =   406.27800,  6958.53800,  227.8,   0.0 !  !END!
3709 ! X =   384.67800,  6958.13800,  447.2,   0.0 !  !END!
3710 ! X =   385.07800,  6958.13800,  449.4,   0.0 !  !END!
3711 ! X =   392.67800,  6958.13800,  518.9,   0.0 !  !END!
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3712 ! X = 393.07800, 6958.13800, 529.9, 0.0 ! !END!
3713 ! X = 393.47800, 6958.13800, 524.3, 0.0 ! !END!
3714 ! X = 402.27800, 6958.13800, 392.0, 0.0 ! !END!
3715 ! X = 402.67800, 6958.13800, 396.1, 0.0 ! !END!
3716 ! X = 403.07800, 6958.13800, 373.1, 0.0 ! !END!
3717 ! X = 403.47800, 6958.13800, 327.4, 0.0 ! !END!
3718 ! X = 403.87800, 6958.13800, 355.9, 0.0 ! !END!
3719 ! X = 403.87800, 6958.13800, 355.9, 0.0 ! !END!
3720 ! X = 405.07800, 6958.13800, 314.5, 0.0 ! !END!
3721 ! X = 405.07800, 6958.13800, 314.5, 0.0 ! !END!
3722 ! X = 405.47800, 6958.13800, 300.0, 0.0 ! !END!
3723 ! X = 405.47800, 6958.13800, 300.0, 0.0 ! !END!
3724 ! X = 405.87800, 6958.13800, 268.8, 0.0 ! !END!
3725 ! X = 405.87800, 6958.13800, 268.8, 0.0 ! !END!
3726 ! X = 406.27800, 6958.13800, 236.1, 0.0 ! !END!
3727 ! X = 406.27800, 6958.13800, 236.1, 0.0 ! !END!
3728 ! X = 406.67800, 6958.13800, 222.0, 0.0 ! !END!
3729 ! X = 406.67800, 6958.13800, 222.0, 0.0 ! !END!
3730 ! X = 384.67800, 6957.73800, 453.9, 0.0 ! !END!
3731 ! X = 385.07800, 6957.73800, 453.7, 0.0 ! !END!
3732 ! X = 385.47800, 6957.73800, 455.9, 0.0 ! !END!
3733 ! X = 393.07800, 6957.73800, 553.3, 0.0 ! !END!
3734 ! X = 393.47800, 6957.73800, 546.5, 0.0 ! !END!
3735 ! X = 398.27800, 6957.73800, 452.7, 0.0 ! !END!
3736 ! X = 398.67800, 6957.73800, 433.9, 0.0 ! !END!
3737 ! X = 399.07800, 6957.73800, 415.2, 0.0 ! !END!
3738 ! X = 399.47800, 6957.73800, 404.5, 0.0 ! !END!
3739 ! X = 399.87800, 6957.73800, 447.6, 0.0 ! !END!
3740 ! X = 400.27800, 6957.73800, 499.8, 0.0 ! !END!
3741 ! X = 400.67800, 6957.73800, 468.7, 0.0 ! !END!
3742 ! X = 401.07800, 6957.73800, 410.4, 0.0 ! !END!
3743 ! X = 401.07800, 6957.73800, 410.4, 0.0 ! !END!
3744 ! X = 401.47800, 6957.73800, 385.0, 0.0 ! !END!
3745 ! X = 401.47800, 6957.73800, 385.0, 0.0 ! !END!
3746 ! X = 401.87800, 6957.73800, 355.5, 0.0 ! !END!
3747 ! X = 401.87800, 6957.73800, 355.5, 0.0 ! !END!
3748 ! X = 402.27800, 6957.73800, 336.0, 0.0 ! !END!
3749 ! X = 402.27800, 6957.73800, 336.0, 0.0 ! !END!
3750 ! X = 402.67800, 6957.73800, 342.4, 0.0 ! !END!
3751 ! X = 405.87800, 6957.73800, 263.9, 0.0 ! !END!
3752 ! X = 405.87800, 6957.73800, 263.9, 0.0 ! !END!
3753 ! X = 406.27800, 6957.73800, 246.0, 0.0 ! !END!
3754 ! X = 406.27800, 6957.73800, 246.0, 0.0 ! !END!
3755 ! X = 406.67800, 6957.73800, 227.2, 0.0 ! !END!
3756 ! X = 406.67800, 6957.73800, 227.2, 0.0 ! !END!
3757 ! X = 407.07800, 6957.73800, 209.7, 0.0 ! !END!
3758 ! X = 384.67800, 6957.33800, 466.2, 0.0 ! !END!
3759 ! X = 385.07800, 6957.33800, 463.2, 0.0 ! !END!
3760 ! X = 385.47800, 6957.33800, 463.2, 0.0 ! !END!
3761 ! X = 385.87800, 6957.33800, 468.3, 0.0 ! !END!
3762 ! X = 393.07800, 6957.33800, 591.4, 0.0 ! !END!
3763 ! X = 393.47800, 6957.33800, 556.2, 0.0 ! !END!
3764 ! X = 393.87800, 6957.33800, 525.6, 0.0 ! !END!
3765 ! X = 397.47800, 6957.33800, 664.9, 0.0 ! !END!
3766 ! X = 397.87800, 6957.33800, 597.3, 0.0 ! !END!
3767 ! X = 398.27800, 6957.33800, 508.4, 0.0 ! !END!
3768 ! X = 398.67800, 6957.33800, 443.4, 0.0 ! !END!
3769 ! X = 399.07800, 6957.33800, 411.4, 0.0 ! !END!
3770 ! X = 399.47800, 6957.33800, 382.3, 0.0 ! !END!
3771 ! X = 399.87800, 6957.33800, 424.9, 0.0 ! !END!
3772 ! X = 400.27800, 6957.33800, 474.8, 0.0 ! !END!
3773 ! X = 400.67800, 6957.33800, 445.4, 0.0 ! !END!
3774 ! X = 400.67800, 6957.33800, 445.4, 0.0 ! !END!
3775 ! X = 401.07800, 6957.33800, 373.0, 0.0 ! !END!
3776 ! X = 401.07800, 6957.33800, 373.0, 0.0 ! !END!
3777 ! X = 401.47800, 6957.33800, 339.2, 0.0 ! !END!
3778 ! X = 401.47800, 6957.33800, 339.2, 0.0 ! !END!
3779 ! X = 401.87800, 6957.33800, 311.1, 0.0 ! !END!
3780 ! X = 401.87800, 6957.33800, 311.1, 0.0 ! !END!
3781 ! X = 402.27800, 6957.33800, 298.6, 0.0 ! !END!
3782 ! X = 402.27800, 6957.33800, 298.6, 0.0 ! !END!

3783 ! X = 406.27800, 6957.33800, 235.9, 0.0 ! !END!
3784 ! X = 406.27800, 6957.33800, 235.9, 0.0 ! !END!
3785 ! X = 406.67800, 6957.33800, 217.9, 0.0 ! !END!
3786 ! X = 406.67800, 6957.33800, 217.9, 0.0 ! !END!
3787 ! X = 407.07800, 6957.33800, 206.4, 0.0 ! !END!
3788 ! X = 407.07800, 6957.33800, 206.4, 0.0 ! !END!
3789 ! X = 407.47800, 6957.33800, 196.5, 0.0 ! !END!
3790 ! X = 407.87800, 6957.33800, 184.4, 0.0 ! !END!
3791 ! X = 407.87800, 6957.33800, 184.4, 0.0 ! !END!
3792 ! X = 408.27800, 6957.33800, 177.6, 0.0 ! !END!
3793 ! X = 408.27800, 6957.33800, 177.6, 0.0 ! !END!
3794 ! X = 408.67800, 6957.33800, 170.8, 0.0 ! !END!
3795 ! X = 408.67800, 6957.33800, 170.8, 0.0 ! !END!
3796 ! X = 409.07800, 6957.33800, 173.5, 0.0 ! !END!
3797 ! X = 409.07800, 6957.33800, 173.5, 0.0 ! !END!
3798 ! X = 409.47800, 6957.33800, 170.4, 0.0 ! !END!
3799 ! X = 409.87800, 6957.33800, 190.2, 0.0 ! !END!
3800 ! X = 385.07800, 6956.93800, 477.3, 0.0 ! !END!
3801 ! X = 385.47800, 6956.93800, 473.2, 0.0 ! !END!
3802 ! X = 385.87800, 6956.93800, 480.2, 0.0 ! !END!
3803 ! X = 386.27800, 6956.93800, 477.8, 0.0 ! !END!
3804 ! X = 386.67800, 6956.93800, 470.4, 0.0 ! !END!
3805 ! X = 387.07800, 6956.93800, 470.8, 0.0 ! !END!
3806 ! X = 393.07800, 6956.93800, 588.7, 0.0 ! !END!
3807 ! X = 393.47800, 6956.93800, 551.8, 0.0 ! !END!
3808 ! X = 393.87800, 6956.93800, 548.1, 0.0 ! !END!
3809 ! X = 396.67800, 6956.93800, 684.9, 0.0 ! !END!
3810 ! X = 397.07800, 6956.93800, 686.4, 0.0 ! !END!
3811 ! X = 397.47800, 6956.93800, 642.2, 0.0 ! !END!
3812 ! X = 397.87800, 6956.93800, 590.0, 0.0 ! !END!
3813 ! X = 398.27800, 6956.93800, 491.7, 0.0 ! !END!
3814 ! X = 398.67800, 6956.93800, 446.9, 0.0 ! !END!
3815 ! X = 400.27800, 6956.93800, 451.2, 0.0 ! !END!
3816 ! X = 400.27800, 6956.93800, 451.2, 0.0 ! !END!
3817 ! X = 400.67800, 6956.93800, 472.2, 0.0 ! !END!
3818 ! X = 400.67800, 6956.93800, 472.2, 0.0 ! !END!
3819 ! X = 401.07800, 6956.93800, 424.9, 0.0 ! !END!
3820 ! X = 401.07800, 6956.93800, 424.9, 0.0 ! !END!
3821 ! X = 401.47800, 6956.93800, 400.2, 0.0 ! !END!
3822 ! X = 401.47800, 6956.93800, 400.2, 0.0 ! !END!
3823 ! X = 401.87800, 6956.93800, 358.7, 0.0 ! !END!
3824 ! X = 401.87800, 6956.93800, 358.7, 0.0 ! !END!
3825 ! X = 402.27800, 6956.93800, 314.8, 0.0 ! !END!
3826 ! X = 402.27800, 6956.93800, 314.8, 0.0 ! !END!
3827 ! X = 407.07800, 6956.93800, 198.3, 0.0 ! !END!
3828 ! X = 407.07800, 6956.93800, 198.3, 0.0 ! !END!
3829 ! X = 407.47800, 6956.93800, 197.3, 0.0 ! !END!
3830 ! X = 407.47800, 6956.93800, 197.3, 0.0 ! !END!
3831 ! X = 407.87800, 6956.93800, 192.2, 0.0 ! !END!
3832 ! X = 407.87800, 6956.93800, 192.2, 0.0 ! !END!
3833 ! X = 408.27800, 6956.93800, 178.0, 0.0 ! !END!
3834 ! X = 408.27800, 6956.93800, 178.0, 0.0 ! !END!
3835 ! X = 408.67800, 6956.93800, 166.3, 0.0 ! !END!
3836 ! X = 408.67800, 6956.93800, 166.3, 0.0 ! !END!
3837 ! X = 409.07800, 6956.93800, 163.4, 0.0 ! !END!
3838 ! X = 409.07800, 6956.93800, 163.4, 0.0 ! !END!
3839 ! X = 409.47800, 6956.93800, 167.6, 0.0 ! !END!
3840 ! X = 409.47800, 6956.93800, 167.6, 0.0 ! !END!
3841 ! X = 409.87800, 6956.93800, 188.8, 0.0 ! !END!
3842 ! X = 409.87800, 6956.93800, 188.8, 0.0 ! !END!
3843 ! X = 410.27800, 6956.93800, 215.1, 0.0 ! !END!
3844 ! X = 385.47800, 6956.53800, 483.9, 0.0 ! !END!
3845 ! X = 385.87800, 6956.53800, 500.9, 0.0 ! !END!
3846 ! X = 386.27800, 6956.53800, 489.0, 0.0 ! !END!
3847 ! X = 386.67800, 6956.53800, 478.0, 0.0 ! !END!
3848 ! X = 387.07800, 6956.53800, 474.8, 0.0 ! !END!
3849 ! X = 387.47800, 6956.53800, 486.5, 0.0 ! !END!
3850 ! X = 387.87800, 6956.53800, 505.4, 0.0 ! !END!
3851 ! X = 387.87800, 6956.53800, 505.4, 0.0 ! !END!
3852 ! X = 388.27800, 6956.53800, 508.4, 0.0 ! !END!
3853 ! X = 388.27800, 6956.53800, 508.4, 0.0 ! !END!

3854 ! X = 388.67800, 6956.53800, 502.3, 0.0 ! !END!
3855 ! X = 388.67800, 6956.53800, 502.3, 0.0 ! !END!
3856 ! X = 389.07800, 6956.53800, 513.3, 0.0 ! !END!
3857 ! X = 389.07800, 6956.53800, 513.3, 0.0 ! !END!
3858 ! X = 389.47800, 6956.53800, 519.6, 0.0 ! !END!
3859 ! X = 389.47800, 6956.53800, 519.6, 0.0 ! !END!
3860 ! X = 389.87800, 6956.53800, 511.8, 0.0 ! !END!
3861 ! X = 389.87800, 6956.53800, 511.8, 0.0 ! !END!
3862 ! X = 390.27800, 6956.53800, 516.0, 0.0 ! !END!
3863 ! X = 390.27800, 6956.53800, 516.0, 0.0 ! !END!
3864 ! X = 390.67800, 6956.53800, 566.2, 0.0 ! !END!
3865 ! X = 390.67800, 6956.53800, 566.2, 0.0 ! !END!
3866 ! X = 391.07800, 6956.53800, 557.9, 0.0 ! !END!
3867 ! X = 393.07800, 6956.53800, 586.9, 0.0 ! !END!
3868 ! X = 393.47800, 6956.53800, 565.2, 0.0 ! !END!
3869 ! X = 396.67800, 6956.53800, 686.9, 0.0 ! !END!
3870 ! X = 397.07800, 6956.53800, 632.7, 0.0 ! !END!
3871 ! X = 397.47800, 6956.53800, 565.0, 0.0 ! !END!
3872 ! X = 397.87800, 6956.53800, 531.7, 0.0 ! !END!
3873 ! X = 407.47800, 6956.53800, 186.3, 0.0 ! !END!
3874 ! X = 407.47800, 6956.53800, 186.3, 0.0 ! !END!
3875 ! X = 407.87800, 6956.53800, 178.0, 0.0 ! !END!
3876 ! X = 407.87800, 6956.53800, 178.0, 0.0 ! !END!
3877 ! X = 408.27800, 6956.53800, 168.3, 0.0 ! !END!
3878 ! X = 408.27800, 6956.53800, 168.3, 0.0 ! !END!
3879 ! X = 409.47800, 6956.53800, 164.2, 0.0 ! !END!
3880 ! X = 409.47800, 6956.53800, 164.2, 0.0 ! !END!
3881 ! X = 409.87800, 6956.53800, 186.1, 0.0 ! !END!
3882 ! X = 409.87800, 6956.53800, 186.1, 0.0 ! !END!
3883 ! X = 410.27800, 6956.53800, 210.6, 0.0 ! !END!
3884 ! X = 410.67800, 6956.53800, 211.2, 0.0 ! !END!
3885 ! X = 386.67800, 6956.13800, 485.3, 0.0 ! !END!
3886 ! X = 387.07800, 6956.13800, 483.4, 0.0 ! !END!
3887 ! X = 387.47800, 6956.13800, 486.9, 0.0 ! !END!
3888 ! X = 387.87800, 6956.13800, 501.8, 0.0 ! !END!
3889 ! X = 388.27800, 6956.13800, 516.2, 0.0 ! !END!
3890 ! X = 388.27800, 6956.13800, 516.2, 0.0 ! !END!
3891 ! X = 388.67800, 6956.13800, 516.9, 0.0 ! !END!
3892 ! X = 388.67800, 6956.13800, 516.9, 0.0 ! !END!
3893 ! X = 389.07800, 6956.13800, 520.4, 0.0 ! !END!
3894 ! X = 389.07800, 6956.13800, 520.4, 0.0 ! !END!
3895 ! X = 389.47800, 6956.13800, 531.3, 0.0 ! !END!
3896 ! X = 389.47800, 6956.13800, 531.3, 0.0 ! !END!
3897 ! X = 389.87800, 6956.13800, 522.2, 0.0 ! !END!
3898 ! X = 389.87800, 6956.13800, 522.2, 0.0 ! !END!
3899 ! X = 390.27800, 6956.13800, 521.5, 0.0 ! !END!
3900 ! X = 390.27800, 6956.13800, 521.5, 0.0 ! !END!
3901 ! X = 390.67800, 6956.13800, 534.5, 0.0 ! !END!
3902 ! X = 391.07800, 6956.13800, 545.4, 0.0 ! !END!
3903 ! X = 391.47800, 6956.13800, 528.3, 0.0 ! !END!
3904 ! X = 391.87800, 6956.13800, 522.4, 0.0 ! !END!
3905 ! X = 392.27800, 6956.13800, 528.7, 0.0 ! !END!
3906 ! X = 392.67800, 6956.13800, 540.0, 0.0 ! !END!
3907 ! X = 393.07800, 6956.13800, 572.0, 0.0 ! !END!
3908 ! X = 393.47800, 6956.13800, 583.1, 0.0 ! !END!
3909 ! X = 396.27800, 6956.13800, 640.5, 0.0 ! !END!
3910 ! X = 396.67800, 6956.13800, 638.1, 0.0 ! !END!
3911 ! X = 397.07800, 6956.13800, 540.7, 0.0 ! !END!
3912 ! X = 410.27800, 6956.13800, 188.7, 0.0 ! !END!
3913 ! X = 410.27800, 6956.13800, 188.7, 0.0 ! !END!
3914 ! X = 410.67800, 6956.13800, 193.8, 0.0 ! !END!
3915 ! X = 411.07800, 6956.13800, 208.7, 0.0 ! !END!
3916 ! X = 390.67800, 6955.73800, 545.2, 0.0 ! !END!
3917 ! X = 391.07800, 6955.73800, 566.8, 0.0 ! !END!
3918 ! X = 391.47800, 6955.73800, 543.1, 0.0 ! !END!
3919 ! X = 391.87800, 6955.73800, 532.0, 0.0 ! !END!
3920 ! X = 392.27800, 6955.73800, 538.5, 0.0 ! !END!
3921 ! X = 392.67800, 6955.73800, 546.4, 0.0 ! !END!
3922 ! X = 393.07800, 6955.73800, 561.0, 0.0 ! !END!
3923 ! X = 396.27800, 6955.73800, 616.9, 0.0 ! !END!
3924 ! X = 396.67800, 6955.73800, 631.8, 0.0 ! !END!

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3925 ! X =   404.27800,  6955.73800,  232.5,   0.0 !  !END!
3926 ! X =   404.27800,  6955.73800,  232.5,   0.0 !  !END!
3927 ! X =   404.67800,  6955.73800,  244.2,   0.0 !  !END!
3928 ! X =   404.67800,  6955.73800,  244.2,   0.0 !  !END!
3929 ! X =   410.67800,  6955.73800,  181.7,   0.0 !  !END!
3930 ! X =   411.07800,  6955.73800,  194.4,   0.0 !  !END!
3931 ! X =   411.47800,  6955.73800,  196.8,   0.0 !  !END!
3932 ! X =   411.87800,  6955.73800,  197.4,   0.0 !  !END!
3933 ! X =   412.27800,  6955.73800,  212.0,   0.0 !  !END!
3934 ! X =   391.47800,  6955.33800,  568.6,   0.0 !  !END!
3935 ! X =   391.87800,  6955.33800,  551.4,   0.0 !  !END!
3936 ! X =   392.27800,  6955.33800,  550.0,   0.0 !  !END!
3937 ! X =   396.27800,  6955.33800,  589.9,   0.0 !  !END!
3938 ! X =   396.67800,  6955.33800,  627.3,   0.0 !  !END!
3939 ! X =   403.87800,  6955.33800,  267.4,   0.0 !  !END!
3940 ! X =   404.27800,  6955.33800,  236.8,   0.0 !  !END!
3941 ! X =   404.27800,  6955.33800,  236.8,   0.0 !  !END!
3942 ! X =   404.67800,  6955.33800,  233.3,   0.0 !  !END!
3943 ! X =   404.67800,  6955.33800,  233.3,   0.0 !  !END!
3944 ! X =   405.07800,  6955.33800,  243.4,   0.0 !  !END!
3945 ! X =   405.07800,  6955.33800,  243.4,   0.0 !  !END!
3946 ! X =   410.67800,  6955.33800,  171.9,   0.0 !  !END!
3947 ! X =   411.07800,  6955.33800,  180.0,   0.0 !  !END!
3948 ! X =   411.47800,  6955.33800,  180.4,   0.0 !  !END!
3949 ! X =   411.87800,  6955.33800,  190.6,   0.0 !  !END!
3950 ! X =   412.27800,  6955.33800,  196.0,   0.0 !  !END!
3951 ! X =   412.67800,  6955.33800,  211.0,   0.0 !  !END!
3952 ! X =   413.07800,  6955.33800,  214.4,   0.0 !  !END!
3953 ! X =   396.27800,  6954.93800,  596.1,   0.0 !  !END!
3954 ! X =   396.67800,  6954.93800,  621.5,   0.0 !  !END!
3955 ! X =   397.07800,  6954.93800,  633.1,   0.0 !  !END!
3956 ! X =   399.47800,  6954.93800,  426.0,   0.0 !  !END!
3957 ! X =   403.47800,  6954.93800,  252.3,   0.0 !  !END!
3958 ! X =   403.47800,  6954.93800,  252.3,   0.0 !  !END!
3959 ! X =   403.87800,  6954.93800,  267.2,   0.0 !  !END!
3960 ! X =   404.27800,  6954.93800,  265.9,   0.0 !  !END!
3961 ! X =   404.67800,  6954.93800,  232.1,   0.0 !  !END!
3962 ! X =   405.07800,  6954.93800,  222.6,   0.0 !  !END!
3963 ! X =   405.47800,  6954.93800,  221.6,   0.0 !  !END!
3964 ! X =   405.87800,  6954.93800,  218.7,   0.0 !  !END!
3965 ! X =   411.87800,  6954.93800,  185.1,   0.0 !  !END!
3966 ! X =   412.27800,  6954.93800,  171.1,   0.0 !  !END!
3967 ! X =   412.67800,  6954.93800,  180.7,   0.0 !  !END!
3968 ! X =   413.07800,  6954.93800,  191.6,   0.0 !  !END!
3969 ! X =   413.47800,  6954.93800,  202.1,   0.0 !  !END!
3970 ! X =   396.67800,  6954.53800,  606.9,   0.0 !  !END!
3971 ! X =   397.07800,  6954.53800,  622.1,   0.0 !  !END!
3972 ! X =   397.47800,  6954.53800,  605.3,   0.0 !  !END!
3973 ! X =   398.67800,  6954.53800,  496.8,   0.0 !  !END!
3974 ! X =   399.07800,  6954.53800,  531.9,   0.0 !  !END!
3975 ! X =   399.47800,  6954.53800,  450.3,   0.0 !  !END!
3976 ! X =   399.87800,  6954.53800,  386.4,   0.0 !  !END!
3977 ! X =   400.27800,  6954.53800,  372.2,   0.0 !  !END!
3978 ! X =   400.67800,  6954.53800,  355.5,   0.0 !  !END!
3979 ! X =   400.67800,  6954.53800,  355.5,   0.0 !  !END!
3980 ! X =   401.07800,  6954.53800,  331.6,   0.0 !  !END!
3981 ! X =   401.07800,  6954.53800,  331.6,   0.0 !  !END!
3982 ! X =   401.47800,  6954.53800,  298.5,   0.0 !  !END!
3983 ! X =   401.47800,  6954.53800,  298.5,   0.0 !  !END!
3984 ! X =   401.87800,  6954.53800,  289.0,   0.0 !  !END!
3985 ! X =   401.87800,  6954.53800,  289.0,   0.0 !  !END!
3986 ! X =   402.27800,  6954.53800,  275.7,   0.0 !  !END!
3987 ! X =   402.27800,  6954.53800,  275.7,   0.0 !  !END!
3988 ! X =   402.67800,  6954.53800,  271.4,   0.0 !  !END!
3989 ! X =   402.67800,  6954.53800,  271.4,   0.0 !  !END!
3990 ! X =   403.07800,  6954.53800,  259.8,   0.0 !  !END!
3991 ! X =   403.07800,  6954.53800,  259.8,   0.0 !  !END!
3992 ! X =   403.47800,  6954.53800,  248.1,   0.0 !  !END!
3993 ! X =   403.87800,  6954.53800,  235.1,   0.0 !  !END!
3994 ! X =   405.07800,  6954.53800,  254.0,   0.0 !  !END!
3995 ! X =   405.47800,  6954.53800,  247.3,   0.0 !  !END!
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3996 ! X = 405.87800, 6954.53800, 241.9, 0.0 ! !END!
3997 ! X = 406.27800, 6954.53800, 220.5, 0.0 ! !END!
3998 ! X = 406.67800, 6954.53800, 209.1, 0.0 ! !END!
3999 ! X = 412.67800, 6954.53800, 159.8, 0.0 ! !END!
4000 ! X = 413.07800, 6954.53800, 170.4, 0.0 ! !END!
4001 ! X = 413.47800, 6954.53800, 175.4, 0.0 ! !END!
4002 ! X = 396.67800, 6954.13800, 610.8, 0.0 ! !END!
4003 ! X = 397.07800, 6954.13800, 638.6, 0.0 ! !END!
4004 ! X = 397.47800, 6954.13800, 659.1, 0.0 ! !END!
4005 ! X = 397.87800, 6954.13800, 669.0, 0.0 ! !END!
4006 ! X = 398.27800, 6954.13800, 633.7, 0.0 ! !END!
4007 ! X = 398.67800, 6954.13800, 622.1, 0.0 ! !END!
4008 ! X = 399.07800, 6954.13800, 605.1, 0.0 ! !END!
4009 ! X = 399.47800, 6954.13800, 499.3, 0.0 ! !END!
4010 ! X = 399.87800, 6954.13800, 412.4, 0.0 ! !END!
4011 ! X = 400.27800, 6954.13800, 377.5, 0.0 ! !END!
4012 ! X = 400.67800, 6954.13800, 357.8, 0.0 ! !END!
4013 ! X = 401.07800, 6954.13800, 325.2, 0.0 ! !END!
4014 ! X = 401.07800, 6954.13800, 325.2, 0.0 ! !END!
4015 ! X = 401.47800, 6954.13800, 316.2, 0.0 ! !END!
4016 ! X = 401.47800, 6954.13800, 316.2, 0.0 ! !END!
4017 ! X = 401.87800, 6954.13800, 291.4, 0.0 ! !END!
4018 ! X = 401.87800, 6954.13800, 291.4, 0.0 ! !END!
4019 ! X = 402.27800, 6954.13800, 290.3, 0.0 ! !END!
4020 ! X = 402.27800, 6954.13800, 290.3, 0.0 ! !END!
4021 ! X = 402.67800, 6954.13800, 280.9, 0.0 ! !END!
4022 ! X = 403.07800, 6954.13800, 272.4, 0.0 ! !END!
4023 ! X = 403.47800, 6954.13800, 273.7, 0.0 ! !END!
4024 ! X = 405.87800, 6954.13800, 246.0, 0.0 ! !END!
4025 ! X = 406.27800, 6954.13800, 235.8, 0.0 ! !END!
4026 ! X = 406.67800, 6954.13800, 214.9, 0.0 ! !END!
4027 ! X = 407.07800, 6954.13800, 196.0, 0.0 ! !END!
4028 ! X = 407.47800, 6954.13800, 196.9, 0.0 ! !END!
4029 ! X = 407.47800, 6954.13800, 196.9, 0.0 ! !END!
4030 ! X = 407.87800, 6954.13800, 181.7, 0.0 ! !END!
4031 ! X = 407.87800, 6954.13800, 181.7, 0.0 ! !END!
4032 ! X = 408.27800, 6954.13800, 175.9, 0.0 ! !END!
4033 ! X = 408.27800, 6954.13800, 175.9, 0.0 ! !END!
4034 ! X = 408.67800, 6954.13800, 172.7, 0.0 ! !END!
4035 ! X = 408.67800, 6954.13800, 172.7, 0.0 ! !END!
4036 ! X = 413.07800, 6954.13800, 163.4, 0.0 ! !END!
4037 ! X = 413.47800, 6954.13800, 159.8, 0.0 ! !END!
4038 ! X = 397.47800, 6953.73800, 663.1, 0.0 ! !END!
4039 ! X = 397.87800, 6953.73800, 676.9, 0.0 ! !END!
4040 ! X = 398.27800, 6953.73800, 660.2, 0.0 ! !END!
4041 ! X = 398.67800, 6953.73800, 624.0, 0.0 ! !END!
4042 ! X = 399.07800, 6953.73800, 544.9, 0.0 ! !END!
4043 ! X = 400.27800, 6953.73800, 395.5, 0.0 ! !END!
4044 ! X = 400.67800, 6953.73800, 379.2, 0.0 ! !END!
4045 ! X = 401.07800, 6953.73800, 381.9, 0.0 ! !END!
4046 ! X = 406.27800, 6953.73800, 207.9, 0.0 ! !END!
4047 ! X = 406.67800, 6953.73800, 197.0, 0.0 ! !END!
4048 ! X = 407.07800, 6953.73800, 190.9, 0.0 ! !END!
4049 ! X = 407.47800, 6953.73800, 189.2, 0.0 ! !END!
4050 ! X = 407.87800, 6953.73800, 181.7, 0.0 ! !END!
4051 ! X = 407.87800, 6953.73800, 181.7, 0.0 ! !END!
4052 ! X = 408.27800, 6953.73800, 180.2, 0.0 ! !END!
4053 ! X = 408.27800, 6953.73800, 180.2, 0.0 ! !END!
4054 ! X = 408.67800, 6953.73800, 178.3, 0.0 ! !END!
4055 ! X = 408.67800, 6953.73800, 178.3, 0.0 ! !END!
4056 ! X = 409.07800, 6953.73800, 174.9, 0.0 ! !END!
4057 ! X = 409.07800, 6953.73800, 174.9, 0.0 ! !END!
4058 ! X = 413.07800, 6953.73800, 151.9, 0.0 ! !END!
4059 ! X = 413.47800, 6953.73800, 155.6, 0.0 ! !END!
4060 ! X = 408.67800, 6953.33800, 189.1, 0.0 ! !END!
4061 ! X = 409.07800, 6953.33800, 175.2, 0.0 ! !END!
4062 ! X = 409.47800, 6953.33800, 165.5, 0.0 ! !END!
4063 ! X = 409.87800, 6953.33800, 164.1, 0.0 ! !END!
4064 ! X = 413.07800, 6953.33800, 144.6, 0.0 ! !END!
4065 ! X = 413.47800, 6953.33800, 149.8, 0.0 ! !END!
4066 ! X = 409.07800, 6952.93800, 182.8, 0.0 ! !END!

4067 ! X = 409.47800, 6952.93800, 168.1, 0.0 ! !END!
4068 ! X = 409.87800, 6952.93800, 159.7, 0.0 ! !END!
4069 ! X = 410.27800, 6952.93800, 157.1, 0.0 ! !END!
4070 ! X = 410.67800, 6952.93800, 155.3, 0.0 ! !END!
4071 ! X = 411.07800, 6952.93800, 153.9, 0.0 ! !END!
4072 ! X = 412.67800, 6952.93800, 140.2, 0.0 ! !END!
4073 ! X = 413.07800, 6952.93800, 143.5, 0.0 ! !END!
4074 ! X = 413.47800, 6952.93800, 148.9, 0.0 ! !END!
4075 ! X = 409.47800, 6952.53800, 171.0, 0.0 ! !END!
4076 ! X = 409.87800, 6952.53800, 169.1, 0.0 ! !END!
4077 ! X = 410.27800, 6952.53800, 169.1, 0.0 ! !END!
4078 ! X = 410.67800, 6952.53800, 158.5, 0.0 ! !END!
4079 ! X = 411.07800, 6952.53800, 150.1, 0.0 ! !END!
4080 ! X = 411.47800, 6952.53800, 149.8, 0.0 ! !END!
4081 ! X = 411.87800, 6952.53800, 152.1, 0.0 ! !END!
4082 ! X = 412.27800, 6952.53800, 147.9, 0.0 ! !END!
4083 ! X = 412.67800, 6952.53800, 141.4, 0.0 ! !END!
4084 ! X = 413.07800, 6952.53800, 137.4, 0.0 ! !END!
4085 ! X = 410.67800, 6952.13800, 171.3, 0.0 ! !END!
4086 ! X = 411.07800, 6952.13800, 167.3, 0.0 ! !END!
4087 ! X = 411.47800, 6952.13800, 169.8, 0.0 ! !END!
4088 ! X = 411.87800, 6952.13800, 160.3, 0.0 ! !END!
4089 ! X = 412.27800, 6952.13800, 148.8, 0.0 ! !END!
4090 ! X = 412.67800, 6952.13800, 142.1, 0.0 ! !END!
4091 ! X = 386.27800, 6958.73800, 454.1, 0.0 ! !END!
4092 ! X = 386.37800, 6958.73800, 454.9, 0.0 ! !END!
4093 ! X = 386.47800, 6958.73800, 456.6, 0.0 ! !END!
4094 ! X = 386.57800, 6958.73800, 457.8, 0.0 ! !END!
4095 ! X = 386.07800, 6958.63800, 452.3, 0.0 ! !END!
4096 ! X = 386.17800, 6958.63800, 452.4, 0.0 ! !END!
4097 ! X = 386.27800, 6958.63800, 452.7, 0.0 ! !END!
4098 ! X = 386.37800, 6958.63800, 453.2, 0.0 ! !END!
4099 ! X = 386.47800, 6958.63800, 455.8, 0.0 ! !END!
4100 ! X = 386.57800, 6958.63800, 456.1, 0.0 ! !END!
4101 ! X = 386.67800, 6958.63800, 458.0, 0.0 ! !END!
4102 ! X = 386.77800, 6958.63800, 458.4, 0.0 ! !END!
4103 ! X = 386.07800, 6958.53800, 451.8, 0.0 ! !END!
4104 ! X = 386.17800, 6958.53800, 452.0, 0.0 ! !END!
4105 ! X = 386.27800, 6958.53800, 452.7, 0.0 ! !END!
4106 ! X = 386.37800, 6958.53800, 453.3, 0.0 ! !END!
4107 ! X = 386.47800, 6958.53800, 454.0, 0.0 ! !END!
4108 ! X = 386.57800, 6958.53800, 454.7, 0.0 ! !END!
4109 ! X = 386.67800, 6958.53800, 455.3, 0.0 ! !END!
4110 ! X = 386.77800, 6958.53800, 456.4, 0.0 ! !END!
4111 ! X = 386.87800, 6958.53800, 458.0, 0.0 ! !END!
4112 ! X = 386.97800, 6958.53800, 459.1, 0.0 ! !END!
4113 ! X = 385.97800, 6958.43800, 451.3, 0.0 ! !END!
4114 ! X = 386.07800, 6958.43800, 451.7, 0.0 ! !END!
4115 ! X = 386.17800, 6958.43800, 452.3, 0.0 ! !END!
4116 ! X = 386.27800, 6958.43800, 453.4, 0.0 ! !END!
4117 ! X = 386.37800, 6958.43800, 453.7, 0.0 ! !END!
4118 ! X = 386.47800, 6958.43800, 453.5, 0.0 ! !END!
4119 ! X = 386.57800, 6958.43800, 453.9, 0.0 ! !END!
4120 ! X = 386.67800, 6958.43800, 454.2, 0.0 ! !END!
4121 ! X = 386.77800, 6958.43800, 454.8, 0.0 ! !END!
4122 ! X = 386.87800, 6958.43800, 456.6, 0.0 ! !END!
4123 ! X = 386.97800, 6958.43800, 457.2, 0.0 ! !END!
4124 ! X = 387.07800, 6958.43800, 459.6, 0.0 ! !END!
4125 ! X = 387.17800, 6958.43800, 460.1, 0.0 ! !END!
4126 ! X = 387.27800, 6958.43800, 462.2, 0.0 ! !END!
4127 ! X = 385.97800, 6958.33800, 454.2, 0.0 ! !END!
4128 ! X = 386.07800, 6958.33800, 454.2, 0.0 ! !END!
4129 ! X = 386.17800, 6958.33800, 454.6, 0.0 ! !END!
4130 ! X = 386.27800, 6958.33800, 455.6, 0.0 ! !END!
4131 ! X = 386.37800, 6958.33800, 455.8, 0.0 ! !END!
4132 ! X = 386.47800, 6958.33800, 455.4, 0.0 ! !END!
4133 ! X = 386.57800, 6958.33800, 455.4, 0.0 ! !END!
4134 ! X = 386.67800, 6958.33800, 455.8, 0.0 ! !END!
4135 ! X = 386.77800, 6958.33800, 456.2, 0.0 ! !END!
4136 ! X = 386.87800, 6958.33800, 456.7, 0.0 ! !END!
4137 ! X = 386.97800, 6958.33800, 457.2, 0.0 ! !END!

4138 ! X = 387.07800, 6958.33800, 457.5, 0.0 ! !END!
4139 ! X = 387.17800, 6958.33800, 458.7, 0.0 ! !END!
4140 ! X = 387.27800, 6958.33800, 461.1, 0.0 ! !END!
4141 ! X = 387.37800, 6958.33800, 462.1, 0.0 ! !END!
4142 ! X = 387.47800, 6958.33800, 463.1, 0.0 ! !END!
4143 ! X = 387.57800, 6958.33800, 463.9, 0.0 ! !END!
4144 ! X = 387.67800, 6958.33800, 464.8, 0.0 ! !END!
4145 ! X = 387.77800, 6958.33800, 466.6, 0.0 ! !END!
4146 ! X = 389.87800, 6958.33800, 484.2, 0.0 ! !END!
4147 ! X = 389.97800, 6958.33800, 483.6, 0.0 ! !END!
4148 ! X = 390.07800, 6958.33800, 483.3, 0.0 ! !END!
4149 ! X = 390.17800, 6958.33800, 483.7, 0.0 ! !END!
4150 ! X = 390.27800, 6958.33800, 484.5, 0.0 ! !END!
4151 ! X = 390.37800, 6958.33800, 485.7, 0.0 ! !END!
4152 ! X = 390.47800, 6958.33800, 486.7, 0.0 ! !END!
4153 ! X = 385.97800, 6958.23800, 456.9, 0.0 ! !END!
4154 ! X = 386.07800, 6958.23800, 455.6, 0.0 ! !END!
4155 ! X = 386.17800, 6958.23800, 455.9, 0.0 ! !END!
4156 ! X = 386.27800, 6958.23800, 457.8, 0.0 ! !END!
4157 ! X = 386.37800, 6958.23800, 457.8, 0.0 ! !END!
4158 ! X = 386.47800, 6958.23800, 456.5, 0.0 ! !END!
4159 ! X = 386.57800, 6958.23800, 456.6, 0.0 ! !END!
4160 ! X = 386.67800, 6958.23800, 457.0, 0.0 ! !END!
4161 ! X = 386.77800, 6958.23800, 457.2, 0.0 ! !END!
4162 ! X = 386.87800, 6958.23800, 457.5, 0.0 ! !END!
4163 ! X = 386.97800, 6958.23800, 457.3, 0.0 ! !END!
4164 ! X = 387.07800, 6958.23800, 456.2, 0.0 ! !END!
4165 ! X = 387.17800, 6958.23800, 456.9, 0.0 ! !END!
4166 ! X = 387.27800, 6958.23800, 461.5, 0.0 ! !END!
4167 ! X = 387.37800, 6958.23800, 461.9, 0.0 ! !END!
4168 ! X = 387.47800, 6958.23800, 463.2, 0.0 ! !END!
4169 ! X = 387.57800, 6958.23800, 463.1, 0.0 ! !END!
4170 ! X = 387.67800, 6958.23800, 463.5, 0.0 ! !END!
4171 ! X = 387.77800, 6958.23800, 464.0, 0.0 ! !END!
4172 ! X = 387.87800, 6958.23800, 468.7, 0.0 ! !END!
4173 ! X = 387.97800, 6958.23800, 469.6, 0.0 ! !END!
4174 ! X = 388.07800, 6958.23800, 475.9, 0.0 ! !END!
4175 ! X = 388.17800, 6958.23800, 477.1, 0.0 ! !END!
4176 ! X = 388.27800, 6958.23800, 486.1, 0.0 ! !END!
4177 ! X = 388.37800, 6958.23800, 484.0, 0.0 ! !END!
4178 ! X = 388.47800, 6958.23800, 471.3, 0.0 ! !END!
4179 ! X = 388.57800, 6958.23800, 470.4, 0.0 ! !END!
4180 ! X = 388.67800, 6958.23800, 470.3, 0.0 ! !END!
4181 ! X = 388.77800, 6958.23800, 470.5, 0.0 ! !END!
4182 ! X = 388.87800, 6958.23800, 470.0, 0.0 ! !END!
4183 ! X = 388.97800, 6958.23800, 470.5, 0.0 ! !END!
4184 ! X = 389.07800, 6958.23800, 471.9, 0.0 ! !END!
4185 ! X = 389.07800, 6958.23800, 471.9, 0.0 ! !END!
4186 ! X = 389.17800, 6958.23800, 472.6, 0.0 ! !END!
4187 ! X = 389.17800, 6958.23800, 472.6, 0.0 ! !END!
4188 ! X = 389.27800, 6958.23800, 473.6, 0.0 ! !END!
4189 ! X = 389.27800, 6958.23800, 473.6, 0.0 ! !END!
4190 ! X = 389.37800, 6958.23800, 474.5, 0.0 ! !END!
4191 ! X = 389.37800, 6958.23800, 474.5, 0.0 ! !END!
4192 ! X = 389.47800, 6958.23800, 478.3, 0.0 ! !END!
4193 ! X = 389.47800, 6958.23800, 478.3, 0.0 ! !END!
4194 ! X = 389.57800, 6958.23800, 479.1, 0.0 ! !END!
4195 ! X = 389.67800, 6958.23800, 482.0, 0.0 ! !END!
4196 ! X = 389.77800, 6958.23800, 482.2, 0.0 ! !END!
4197 ! X = 389.87800, 6958.23800, 482.3, 0.0 ! !END!
4198 ! X = 389.97800, 6958.23800, 482.2, 0.0 ! !END!
4199 ! X = 390.07800, 6958.23800, 482.2, 0.0 ! !END!
4200 ! X = 390.17800, 6958.23800, 482.2, 0.0 ! !END!
4201 ! X = 390.27800, 6958.23800, 483.2, 0.0 ! !END!
4202 ! X = 390.37800, 6958.23800, 483.2, 0.0 ! !END!
4203 ! X = 390.47800, 6958.23800, 483.1, 0.0 ! !END!
4204 ! X = 390.57800, 6958.23800, 483.8, 0.0 ! !END!
4205 ! X = 390.67800, 6958.23800, 488.6, 0.0 ! !END!
4206 ! X = 390.77800, 6958.23800, 489.9, 0.0 ! !END!
4207 ! X = 390.87800, 6958.23800, 497.5, 0.0 ! !END!
4208 ! X = 385.97800, 6958.13800, 456.5, 0.0 ! !END!

4209 ! X = 386.07800, 6958.13800, 457.5, 0.0 ! !END!
4210 ! X = 386.17800, 6958.13800, 457.9, 0.0 ! !END!
4211 ! X = 386.27800, 6958.13800, 459.0, 0.0 ! !END!
4212 ! X = 386.37800, 6958.13800, 459.1, 0.0 ! !END!
4213 ! X = 386.47800, 6958.13800, 458.4, 0.0 ! !END!
4214 ! X = 386.57800, 6958.13800, 458.2, 0.0 ! !END!
4215 ! X = 386.67800, 6958.13800, 458.1, 0.0 ! !END!
4216 ! X = 386.77800, 6958.13800, 458.2, 0.0 ! !END!
4217 ! X = 386.87800, 6958.13800, 458.1, 0.0 ! !END!
4218 ! X = 386.97800, 6958.13800, 457.7, 0.0 ! !END!
4219 ! X = 387.07800, 6958.13800, 457.0, 0.0 ! !END!
4220 ! X = 387.17800, 6958.13800, 457.6, 0.0 ! !END!
4221 ! X = 387.27800, 6958.13800, 459.2, 0.0 ! !END!
4222 ! X = 387.37800, 6958.13800, 460.3, 0.0 ! !END!
4223 ! X = 387.47800, 6958.13800, 461.3, 0.0 ! !END!
4224 ! X = 387.57800, 6958.13800, 461.7, 0.0 ! !END!
4225 ! X = 387.67800, 6958.13800, 462.2, 0.0 ! !END!
4226 ! X = 387.77800, 6958.13800, 463.0, 0.0 ! !END!
4227 ! X = 387.87800, 6958.13800, 464.2, 0.0 ! !END!
4228 ! X = 387.97800, 6958.13800, 466.2, 0.0 ! !END!
4229 ! X = 388.07800, 6958.13800, 468.8, 0.0 ! !END!
4230 ! X = 388.17800, 6958.13800, 471.8, 0.0 ! !END!
4231 ! X = 388.27800, 6958.13800, 475.0, 0.0 ! !END!
4232 ! X = 388.37800, 6958.13800, 474.4, 0.0 ! !END!
4233 ! X = 388.47800, 6958.13800, 471.7, 0.0 ! !END!
4234 ! X = 388.57800, 6958.13800, 469.9, 0.0 ! !END!
4235 ! X = 388.67800, 6958.13800, 470.6, 0.0 ! !END!
4236 ! X = 388.77800, 6958.13800, 470.8, 0.0 ! !END!
4237 ! X = 388.87800, 6958.13800, 471.4, 0.0 ! !END!
4238 ! X = 388.97800, 6958.13800, 471.8, 0.0 ! !END!
4239 ! X = 388.97800, 6958.13800, 471.8, 0.0 ! !END!
4240 ! X = 389.07800, 6958.13800, 472.8, 0.0 ! !END!
4241 ! X = 389.07800, 6958.13800, 472.8, 0.0 ! !END!
4242 ! X = 389.17800, 6958.13800, 473.4, 0.0 ! !END!
4243 ! X = 389.17800, 6958.13800, 473.4, 0.0 ! !END!
4244 ! X = 389.27800, 6958.13800, 474.4, 0.0 ! !END!
4245 ! X = 389.27800, 6958.13800, 474.4, 0.0 ! !END!
4246 ! X = 389.37800, 6958.13800, 475.3, 0.0 ! !END!
4247 ! X = 389.37800, 6958.13800, 475.3, 0.0 ! !END!
4248 ! X = 389.47800, 6958.13800, 476.0, 0.0 ! !END!
4249 ! X = 389.47800, 6958.13800, 476.0, 0.0 ! !END!
4250 ! X = 389.57800, 6958.13800, 477.2, 0.0 ! !END!
4251 ! X = 389.57800, 6958.13800, 477.2, 0.0 ! !END!
4252 ! X = 389.67800, 6958.13800, 478.4, 0.0 ! !END!
4253 ! X = 389.77800, 6958.13800, 479.3, 0.0 ! !END!
4254 ! X = 389.87800, 6958.13800, 480.2, 0.0 ! !END!
4255 ! X = 389.97800, 6958.13800, 480.4, 0.0 ! !END!
4256 ! X = 390.07800, 6958.13800, 480.7, 0.0 ! !END!
4257 ! X = 390.17800, 6958.13800, 481.0, 0.0 ! !END!
4258 ! X = 390.27800, 6958.13800, 481.5, 0.0 ! !END!
4259 ! X = 390.37800, 6958.13800, 481.7, 0.0 ! !END!
4260 ! X = 390.47800, 6958.13800, 482.1, 0.0 ! !END!
4261 ! X = 390.57800, 6958.13800, 482.8, 0.0 ! !END!
4262 ! X = 390.67800, 6958.13800, 483.7, 0.0 ! !END!
4263 ! X = 390.77800, 6958.13800, 486.2, 0.0 ! !END!
4264 ! X = 390.87800, 6958.13800, 490.0, 0.0 ! !END!
4265 ! X = 390.97800, 6958.13800, 492.8, 0.0 ! !END!
4266 ! X = 391.07800, 6958.13800, 494.8, 0.0 ! !END!
4267 ! X = 391.17800, 6958.13800, 495.2, 0.0 ! !END!
4268 ! X = 385.97800, 6958.03800, 456.6, 0.0 ! !END!
4269 ! X = 386.07800, 6958.03800, 458.6, 0.0 ! !END!
4270 ! X = 386.17800, 6958.03800, 459.0, 0.0 ! !END!
4271 ! X = 386.27800, 6958.03800, 460.3, 0.0 ! !END!
4272 ! X = 386.37800, 6958.03800, 460.2, 0.0 ! !END!
4273 ! X = 386.47800, 6958.03800, 459.1, 0.0 ! !END!
4274 ! X = 386.57800, 6958.03800, 459.1, 0.0 ! !END!
4275 ! X = 386.67800, 6958.03800, 459.0, 0.0 ! !END!
4276 ! X = 386.77800, 6958.03800, 459.0, 0.0 ! !END!
4277 ! X = 386.87800, 6958.03800, 458.6, 0.0 ! !END!
4278 ! X = 386.97800, 6958.03800, 458.5, 0.0 ! !END!
4279 ! X = 387.07800, 6958.03800, 457.2, 0.0 ! !END!

4280 ! X = 387.17800, 6958.03800, 457.6, 0.0 ! !END!
4281 ! X = 387.27800, 6958.03800, 459.0, 0.0 ! !END!
4282 ! X = 387.37800, 6958.03800, 459.7, 0.0 ! !END!
4283 ! X = 387.47800, 6958.03800, 460.7, 0.0 ! !END!
4284 ! X = 387.57800, 6958.03800, 461.2, 0.0 ! !END!
4285 ! X = 387.67800, 6958.03800, 461.9, 0.0 ! !END!
4286 ! X = 387.77800, 6958.03800, 462.1, 0.0 ! !END!
4287 ! X = 387.87800, 6958.03800, 462.3, 0.0 ! !END!
4288 ! X = 387.97800, 6958.03800, 462.9, 0.0 ! !END!
4289 ! X = 388.07800, 6958.03800, 465.9, 0.0 ! !END!
4290 ! X = 388.17800, 6958.03800, 466.8, 0.0 ! !END!
4291 ! X = 388.27800, 6958.03800, 470.2, 0.0 ! !END!
4292 ! X = 388.37800, 6958.03800, 470.7, 0.0 ! !END!
4293 ! X = 388.47800, 6958.03800, 469.5, 0.0 ! !END!
4294 ! X = 388.57800, 6958.03800, 469.8, 0.0 ! !END!
4295 ! X = 388.67800, 6958.03800, 471.2, 0.0 ! !END!
4296 ! X = 388.77800, 6958.03800, 471.5, 0.0 ! !END!
4297 ! X = 388.87800, 6958.03800, 472.5, 0.0 ! !END!
4298 ! X = 388.87800, 6958.03800, 472.5, 0.0 ! !END!
4299 ! X = 388.97800, 6958.03800, 472.7, 0.0 ! !END!
4300 ! X = 388.97800, 6958.03800, 472.7, 0.0 ! !END!
4301 ! X = 389.07800, 6958.03800, 473.9, 0.0 ! !END!
4302 ! X = 389.07800, 6958.03800, 473.9, 0.0 ! !END!
4303 ! X = 389.17800, 6958.03800, 474.3, 0.0 ! !END!
4304 ! X = 389.17800, 6958.03800, 474.3, 0.0 ! !END!
4305 ! X = 389.27800, 6958.03800, 475.8, 0.0 ! !END!
4306 ! X = 389.27800, 6958.03800, 475.8, 0.0 ! !END!
4307 ! X = 389.37800, 6958.03800, 475.9, 0.0 ! !END!
4308 ! X = 389.37800, 6958.03800, 475.9, 0.0 ! !END!
4309 ! X = 389.47800, 6958.03800, 475.5, 0.0 ! !END!
4310 ! X = 389.47800, 6958.03800, 475.5, 0.0 ! !END!
4311 ! X = 389.57800, 6958.03800, 475.9, 0.0 ! !END!
4312 ! X = 389.57800, 6958.03800, 475.9, 0.0 ! !END!
4313 ! X = 389.67800, 6958.03800, 477.1, 0.0 ! !END!
4314 ! X = 389.67800, 6958.03800, 477.1, 0.0 ! !END!
4315 ! X = 389.77800, 6958.03800, 477.8, 0.0 ! !END!
4316 ! X = 389.87800, 6958.03800, 479.3, 0.0 ! !END!
4317 ! X = 389.97800, 6958.03800, 479.7, 0.0 ! !END!
4318 ! X = 390.07800, 6958.03800, 480.1, 0.0 ! !END!
4319 ! X = 390.17800, 6958.03800, 480.4, 0.0 ! !END!
4320 ! X = 390.27800, 6958.03800, 480.7, 0.0 ! !END!
4321 ! X = 390.37800, 6958.03800, 481.1, 0.0 ! !END!
4322 ! X = 390.47800, 6958.03800, 482.1, 0.0 ! !END!
4323 ! X = 390.57800, 6958.03800, 482.1, 0.0 ! !END!
4324 ! X = 390.67800, 6958.03800, 481.4, 0.0 ! !END!
4325 ! X = 390.77800, 6958.03800, 482.3, 0.0 ! !END!
4326 ! X = 390.87800, 6958.03800, 487.8, 0.0 ! !END!
4327 ! X = 390.97800, 6958.03800, 488.7, 0.0 ! !END!
4328 ! X = 391.07800, 6958.03800, 490.5, 0.0 ! !END!
4329 ! X = 391.17800, 6958.03800, 490.9, 0.0 ! !END!
4330 ! X = 391.27800, 6958.03800, 489.9, 0.0 ! !END!
4331 ! X = 391.37800, 6958.03800, 490.1, 0.0 ! !END!
4332 ! X = 391.47800, 6958.03800, 489.4, 0.0 ! !END!
4333 ! X = 386.07800, 6957.93800, 459.1, 0.0 ! !END!
4334 ! X = 386.17800, 6957.93800, 459.8, 0.0 ! !END!
4335 ! X = 386.27800, 6957.93800, 460.1, 0.0 ! !END!
4336 ! X = 386.37800, 6957.93800, 460.0, 0.0 ! !END!
4337 ! X = 386.47800, 6957.93800, 459.8, 0.0 ! !END!
4338 ! X = 386.57800, 6957.93800, 459.8, 0.0 ! !END!
4339 ! X = 386.67800, 6957.93800, 460.4, 0.0 ! !END!
4340 ! X = 386.77800, 6957.93800, 460.3, 0.0 ! !END!
4341 ! X = 386.87800, 6957.93800, 460.1, 0.0 ! !END!
4342 ! X = 386.97800, 6957.93800, 459.7, 0.0 ! !END!
4343 ! X = 387.07800, 6957.93800, 459.5, 0.0 ! !END!
4344 ! X = 387.17800, 6957.93800, 459.9, 0.0 ! !END!
4345 ! X = 387.27800, 6957.93800, 461.5, 0.0 ! !END!
4346 ! X = 387.37800, 6957.93800, 462.1, 0.0 ! !END!
4347 ! X = 387.47800, 6957.93800, 462.6, 0.0 ! !END!
4348 ! X = 387.57800, 6957.93800, 462.9, 0.0 ! !END!
4349 ! X = 387.67800, 6957.93800, 463.1, 0.0 ! !END!
4350 ! X = 387.77800, 6957.93800, 463.1, 0.0 ! !END!

4351 ! X = 387.87800, 6957.93800, 462.9, 0.0 ! !END!
4352 ! X = 387.97800, 6957.93800, 463.4, 0.0 ! !END!
4353 ! X = 388.07800, 6957.93800, 464.2, 0.0 ! !END!
4354 ! X = 388.17800, 6957.93800, 465.5, 0.0 ! !END!
4355 ! X = 388.27800, 6957.93800, 467.1, 0.0 ! !END!
4356 ! X = 388.37800, 6957.93800, 468.1, 0.0 ! !END!
4357 ! X = 388.47800, 6957.93800, 469.4, 0.0 ! !END!
4358 ! X = 388.57800, 6957.93800, 469.9, 0.0 ! !END!
4359 ! X = 388.67800, 6957.93800, 471.0, 0.0 ! !END!
4360 ! X = 388.77800, 6957.93800, 471.7, 0.0 ! !END!
4361 ! X = 388.87800, 6957.93800, 472.6, 0.0 ! !END!
4362 ! X = 388.87800, 6957.93800, 472.6, 0.0 ! !END!
4363 ! X = 388.97800, 6957.93800, 473.2, 0.0 ! !END!
4364 ! X = 388.97800, 6957.93800, 473.2, 0.0 ! !END!
4365 ! X = 389.07800, 6957.93800, 474.4, 0.0 ! !END!
4366 ! X = 389.07800, 6957.93800, 474.4, 0.0 ! !END!
4367 ! X = 389.17800, 6957.93800, 475.1, 0.0 ! !END!
4368 ! X = 389.17800, 6957.93800, 475.1, 0.0 ! !END!
4369 ! X = 389.27800, 6957.93800, 476.1, 0.0 ! !END!
4370 ! X = 389.27800, 6957.93800, 476.1, 0.0 ! !END!
4371 ! X = 389.37800, 6957.93800, 476.4, 0.0 ! !END!
4372 ! X = 389.37800, 6957.93800, 476.4, 0.0 ! !END!
4373 ! X = 389.47800, 6957.93800, 476.8, 0.0 ! !END!
4374 ! X = 389.47800, 6957.93800, 476.8, 0.0 ! !END!
4375 ! X = 389.57800, 6957.93800, 477.1, 0.0 ! !END!
4376 ! X = 389.57800, 6957.93800, 477.1, 0.0 ! !END!
4377 ! X = 389.67800, 6957.93800, 478.0, 0.0 ! !END!
4378 ! X = 389.67800, 6957.93800, 478.0, 0.0 ! !END!
4379 ! X = 389.77800, 6957.93800, 478.7, 0.0 ! !END!
4380 ! X = 389.87800, 6957.93800, 479.5, 0.0 ! !END!
4381 ! X = 389.97800, 6957.93800, 480.1, 0.0 ! !END!
4382 ! X = 390.07800, 6957.93800, 481.0, 0.0 ! !END!
4383 ! X = 390.17800, 6957.93800, 481.3, 0.0 ! !END!
4384 ! X = 390.27800, 6957.93800, 481.5, 0.0 ! !END!
4385 ! X = 390.37800, 6957.93800, 481.8, 0.0 ! !END!
4386 ! X = 390.47800, 6957.93800, 482.2, 0.0 ! !END!
4387 ! X = 390.57800, 6957.93800, 482.2, 0.0 ! !END!
4388 ! X = 390.67800, 6957.93800, 482.1, 0.0 ! !END!
4389 ! X = 390.77800, 6957.93800, 482.9, 0.0 ! !END!
4390 ! X = 390.87800, 6957.93800, 484.5, 0.0 ! !END!
4391 ! X = 390.97800, 6957.93800, 486.5, 0.0 ! !END!
4392 ! X = 391.07800, 6957.93800, 489.8, 0.0 ! !END!
4393 ! X = 391.17800, 6957.93800, 490.3, 0.0 ! !END!
4394 ! X = 391.27800, 6957.93800, 490.1, 0.0 ! !END!
4395 ! X = 391.37800, 6957.93800, 489.9, 0.0 ! !END!
4396 ! X = 391.47800, 6957.93800, 490.4, 0.0 ! !END!
4397 ! X = 391.57800, 6957.93800, 491.0, 0.0 ! !END!
4398 ! X = 391.67800, 6957.93800, 492.8, 0.0 ! !END!
4399 ! X = 386.17800, 6957.83800, 460.8, 0.0 ! !END!
4400 ! X = 386.27800, 6957.83800, 460.1, 0.0 ! !END!
4401 ! X = 386.37800, 6957.83800, 460.1, 0.0 ! !END!
4402 ! X = 386.47800, 6957.83800, 459.9, 0.0 ! !END!
4403 ! X = 386.57800, 6957.83800, 460.1, 0.0 ! !END!
4404 ! X = 386.67800, 6957.83800, 461.4, 0.0 ! !END!
4405 ! X = 386.77800, 6957.83800, 461.4, 0.0 ! !END!
4406 ! X = 386.87800, 6957.83800, 460.9, 0.0 ! !END!
4407 ! X = 386.97800, 6957.83800, 461.1, 0.0 ! !END!
4408 ! X = 387.07800, 6957.83800, 460.7, 0.0 ! !END!
4409 ! X = 387.17800, 6957.83800, 461.8, 0.0 ! !END!
4410 ! X = 387.27800, 6957.83800, 464.3, 0.0 ! !END!
4411 ! X = 387.37800, 6957.83800, 465.4, 0.0 ! !END!
4412 ! X = 387.47800, 6957.83800, 464.7, 0.0 ! !END!
4413 ! X = 387.57800, 6957.83800, 465.5, 0.0 ! !END!
4414 ! X = 387.67800, 6957.83800, 464.6, 0.0 ! !END!
4415 ! X = 387.77800, 6957.83800, 465.0, 0.0 ! !END!
4416 ! X = 387.87800, 6957.83800, 463.7, 0.0 ! !END!
4417 ! X = 387.97800, 6957.83800, 464.2, 0.0 ! !END!
4418 ! X = 388.07800, 6957.83800, 464.2, 0.0 ! !END!
4419 ! X = 388.17800, 6957.83800, 464.9, 0.0 ! !END!
4420 ! X = 388.27800, 6957.83800, 466.4, 0.0 ! !END!
4421 ! X = 388.37800, 6957.83800, 467.3, 0.0 ! !END!

4422 ! X = 388.47800, 6957.83800, 469.7, 0.0 ! !END!
4423 ! X = 388.57800, 6957.83800, 470.6, 0.0 ! !END!
4424 ! X = 388.67800, 6957.83800, 471.7, 0.0 ! !END!
4425 ! X = 388.77800, 6957.83800, 472.4, 0.0 ! !END!
4426 ! X = 388.87800, 6957.83800, 472.9, 0.0 ! !END!
4427 ! X = 388.87800, 6957.83800, 472.9, 0.0 ! !END!
4428 ! X = 388.97800, 6957.83800, 473.5, 0.0 ! !END!
4429 ! X = 388.97800, 6957.83800, 473.5, 0.0 ! !END!
4430 ! X = 389.07800, 6957.83800, 475.1, 0.0 ! !END!
4431 ! X = 389.07800, 6957.83800, 475.1, 0.0 ! !END!
4432 ! X = 389.17800, 6957.83800, 475.5, 0.0 ! !END!
4433 ! X = 389.17800, 6957.83800, 475.5, 0.0 ! !END!
4434 ! X = 389.27800, 6957.83800, 476.6, 0.0 ! !END!
4435 ! X = 389.27800, 6957.83800, 476.6, 0.0 ! !END!
4436 ! X = 389.37800, 6957.83800, 476.8, 0.0 ! !END!
4437 ! X = 389.37800, 6957.83800, 476.8, 0.0 ! !END!
4438 ! X = 389.47800, 6957.83800, 477.5, 0.0 ! !END!
4439 ! X = 389.47800, 6957.83800, 477.5, 0.0 ! !END!
4440 ! X = 389.57800, 6957.83800, 477.8, 0.0 ! !END!
4441 ! X = 389.57800, 6957.83800, 477.8, 0.0 ! !END!
4442 ! X = 389.67800, 6957.83800, 479.2, 0.0 ! !END!
4443 ! X = 389.67800, 6957.83800, 479.2, 0.0 ! !END!
4444 ! X = 389.77800, 6957.83800, 479.5, 0.0 ! !END!
4445 ! X = 389.77800, 6957.83800, 479.5, 0.0 ! !END!
4446 ! X = 389.87800, 6957.83800, 480.1, 0.0 ! !END!
4447 ! X = 389.97800, 6957.83800, 480.8, 0.0 ! !END!
4448 ! X = 390.07800, 6957.83800, 482.4, 0.0 ! !END!
4449 ! X = 390.17800, 6957.83800, 483.3, 0.0 ! !END!
4450 ! X = 390.27800, 6957.83800, 482.8, 0.0 ! !END!
4451 ! X = 390.37800, 6957.83800, 483.2, 0.0 ! !END!
4452 ! X = 390.47800, 6957.83800, 482.6, 0.0 ! !END!
4453 ! X = 390.57800, 6957.83800, 482.9, 0.0 ! !END!
4454 ! X = 390.67800, 6957.83800, 482.8, 0.0 ! !END!
4455 ! X = 390.77800, 6957.83800, 483.0, 0.0 ! !END!
4456 ! X = 390.87800, 6957.83800, 483.3, 0.0 ! !END!
4457 ! X = 390.97800, 6957.83800, 484.7, 0.0 ! !END!
4458 ! X = 391.07800, 6957.83800, 491.2, 0.0 ! !END!
4459 ! X = 391.17800, 6957.83800, 491.6, 0.0 ! !END!
4460 ! X = 391.27800, 6957.83800, 490.1, 0.0 ! !END!
4461 ! X = 391.37800, 6957.83800, 490.4, 0.0 ! !END!
4462 ! X = 391.47800, 6957.83800, 491.2, 0.0 ! !END!
4463 ! X = 391.57800, 6957.83800, 492.2, 0.0 ! !END!
4464 ! X = 391.67800, 6957.83800, 494.1, 0.0 ! !END!
4465 ! X = 391.77800, 6957.83800, 495.6, 0.0 ! !END!
4466 ! X = 386.47800, 6957.73800, 460.7, 0.0 ! !END!
4467 ! X = 386.57800, 6957.73800, 460.9, 0.0 ! !END!
4468 ! X = 386.67800, 6957.73800, 461.2, 0.0 ! !END!
4469 ! X = 386.77800, 6957.73800, 461.4, 0.0 ! !END!
4470 ! X = 386.87800, 6957.73800, 461.8, 0.0 ! !END!
4471 ! X = 386.97800, 6957.73800, 462.2, 0.0 ! !END!
4472 ! X = 387.07800, 6957.73800, 464.5, 0.0 ! !END!
4473 ! X = 387.17800, 6957.73800, 466.0, 0.0 ! !END!
4474 ! X = 387.27800, 6957.73800, 470.1, 0.0 ! !END!
4475 ! X = 387.37800, 6957.73800, 471.3, 0.0 ! !END!
4476 ! X = 387.47800, 6957.73800, 473.1, 0.0 ! !END!
4477 ! X = 387.57800, 6957.73800, 472.9, 0.0 ! !END!
4478 ! X = 387.67800, 6957.73800, 472.0, 0.0 ! !END!
4479 ! X = 387.77800, 6957.73800, 471.0, 0.0 ! !END!
4480 ! X = 387.87800, 6957.73800, 468.9, 0.0 ! !END!
4481 ! X = 387.97800, 6957.73800, 468.4, 0.0 ! !END!
4482 ! X = 388.07800, 6957.73800, 468.2, 0.0 ! !END!
4483 ! X = 388.17800, 6957.73800, 468.2, 0.0 ! !END!
4484 ! X = 388.27800, 6957.73800, 468.2, 0.0 ! !END!
4485 ! X = 388.37800, 6957.73800, 469.0, 0.0 ! !END!
4486 ! X = 388.47800, 6957.73800, 470.9, 0.0 ! !END!
4487 ! X = 388.57800, 6957.73800, 472.5, 0.0 ! !END!
4488 ! X = 388.67800, 6957.73800, 475.6, 0.0 ! !END!
4489 ! X = 388.77800, 6957.73800, 476.1, 0.0 ! !END!
4490 ! X = 388.87800, 6957.73800, 475.5, 0.0 ! !END!
4491 ! X = 388.87800, 6957.73800, 475.5, 0.0 ! !END!
4492 ! X = 388.97800, 6957.73800, 475.5, 0.0 ! !END!

4493 ! X = 388.97800, 6957.73800, 475.5, 0.0 ! !END!
4494 ! X = 389.07800, 6957.73800, 475.4, 0.0 ! !END!
4495 ! X = 389.07800, 6957.73800, 475.4, 0.0 ! !END!
4496 ! X = 389.17800, 6957.73800, 476.0, 0.0 ! !END!
4497 ! X = 389.17800, 6957.73800, 476.0, 0.0 ! !END!
4498 ! X = 389.27800, 6957.73800, 476.6, 0.0 ! !END!
4499 ! X = 389.27800, 6957.73800, 476.6, 0.0 ! !END!
4500 ! X = 389.37800, 6957.73800, 477.0, 0.0 ! !END!
4501 ! X = 389.37800, 6957.73800, 477.0, 0.0 ! !END!
4502 ! X = 389.47800, 6957.73800, 477.6, 0.0 ! !END!
4503 ! X = 389.47800, 6957.73800, 477.6, 0.0 ! !END!
4504 ! X = 389.57800, 6957.73800, 478.2, 0.0 ! !END!
4505 ! X = 389.57800, 6957.73800, 478.2, 0.0 ! !END!
4506 ! X = 389.67800, 6957.73800, 479.6, 0.0 ! !END!
4507 ! X = 389.67800, 6957.73800, 479.6, 0.0 ! !END!
4508 ! X = 389.77800, 6957.73800, 480.2, 0.0 ! !END!
4509 ! X = 389.77800, 6957.73800, 480.2, 0.0 ! !END!
4510 ! X = 389.87800, 6957.73800, 481.4, 0.0 ! !END!
4511 ! X = 389.97800, 6957.73800, 482.5, 0.0 ! !END!
4512 ! X = 390.07800, 6957.73800, 485.9, 0.0 ! !END!
4513 ! X = 390.17800, 6957.73800, 487.2, 0.0 ! !END!
4514 ! X = 390.27800, 6957.73800, 489.3, 0.0 ! !END!
4515 ! X = 390.37800, 6957.73800, 488.6, 0.0 ! !END!
4516 ! X = 390.47800, 6957.73800, 485.7, 0.0 ! !END!
4517 ! X = 390.57800, 6957.73800, 485.0, 0.0 ! !END!
4518 ! X = 390.67800, 6957.73800, 484.3, 0.0 ! !END!
4519 ! X = 390.77800, 6957.73800, 484.3, 0.0 ! !END!
4520 ! X = 390.87800, 6957.73800, 485.1, 0.0 ! !END!
4521 ! X = 390.97800, 6957.73800, 486.7, 0.0 ! !END!
4522 ! X = 391.07800, 6957.73800, 489.8, 0.0 ! !END!
4523 ! X = 391.17800, 6957.73800, 491.1, 0.0 ! !END!
4524 ! X = 391.27800, 6957.73800, 491.9, 0.0 ! !END!
4525 ! X = 391.37800, 6957.73800, 492.2, 0.0 ! !END!
4526 ! X = 391.47800, 6957.73800, 493.9, 0.0 ! !END!
4527 ! X = 391.57800, 6957.73800, 495.3, 0.0 ! !END!
4528 ! X = 391.67800, 6957.73800, 499.0, 0.0 ! !END!
4529 ! X = 391.77800, 6957.73800, 500.6, 0.0 ! !END!
4530 ! X = 391.87800, 6957.73800, 503.4, 0.0 ! !END!
4531 ! X = 391.97800, 6957.73800, 505.1, 0.0 ! !END!
4532 ! X = 386.67800, 6957.63800, 461.3, 0.0 ! !END!
4533 ! X = 386.77800, 6957.63800, 461.5, 0.0 ! !END!
4534 ! X = 386.87800, 6957.63800, 462.0, 0.0 ! !END!
4535 ! X = 386.97800, 6957.63800, 463.0, 0.0 ! !END!
4536 ! X = 387.07800, 6957.63800, 467.0, 0.0 ! !END!
4537 ! X = 387.17800, 6957.63800, 468.8, 0.0 ! !END!
4538 ! X = 387.27800, 6957.63800, 475.1, 0.0 ! !END!
4539 ! X = 387.37800, 6957.63800, 476.8, 0.0 ! !END!
4540 ! X = 387.47800, 6957.63800, 479.4, 0.0 ! !END!
4541 ! X = 387.57800, 6957.63800, 479.7, 0.0 ! !END!
4542 ! X = 387.67800, 6957.63800, 476.8, 0.0 ! !END!
4543 ! X = 387.77800, 6957.63800, 476.6, 0.0 ! !END!
4544 ! X = 387.87800, 6957.63800, 471.9, 0.0 ! !END!
4545 ! X = 387.97800, 6957.63800, 472.5, 0.0 ! !END!
4546 ! X = 388.07800, 6957.63800, 471.4, 0.0 ! !END!
4547 ! X = 388.17800, 6957.63800, 471.5, 0.0 ! !END!
4548 ! X = 388.27800, 6957.63800, 469.4, 0.0 ! !END!
4549 ! X = 388.37800, 6957.63800, 470.3, 0.0 ! !END!
4550 ! X = 388.47800, 6957.63800, 472.5, 0.0 ! !END!
4551 ! X = 388.57800, 6957.63800, 475.0, 0.0 ! !END!
4552 ! X = 388.67800, 6957.63800, 480.4, 0.0 ! !END!
4553 ! X = 388.77800, 6957.63800, 481.1, 0.0 ! !END!
4554 ! X = 388.87800, 6957.63800, 477.1, 0.0 ! !END!
4555 ! X = 388.87800, 6957.63800, 477.1, 0.0 ! !END!
4556 ! X = 388.97800, 6957.63800, 477.3, 0.0 ! !END!
4557 ! X = 388.97800, 6957.63800, 477.3, 0.0 ! !END!
4558 ! X = 389.07800, 6957.63800, 476.1, 0.0 ! !END!
4559 ! X = 389.07800, 6957.63800, 476.1, 0.0 ! !END!
4560 ! X = 389.17800, 6957.63800, 476.6, 0.0 ! !END!
4561 ! X = 389.17800, 6957.63800, 476.6, 0.0 ! !END!
4562 ! X = 389.27800, 6957.63800, 477.2, 0.0 ! !END!
4563 ! X = 389.27800, 6957.63800, 477.2, 0.0 ! !END!

4564 ! X = 389.37800, 6957.63800, 477.8, 0.0 ! !END!
4565 ! X = 389.37800, 6957.63800, 477.8, 0.0 ! !END!
4566 ! X = 389.47800, 6957.63800, 477.9, 0.0 ! !END!
4567 ! X = 389.47800, 6957.63800, 477.9, 0.0 ! !END!
4568 ! X = 389.57800, 6957.63800, 478.6, 0.0 ! !END!
4569 ! X = 389.57800, 6957.63800, 478.6, 0.0 ! !END!
4570 ! X = 389.67800, 6957.63800, 480.6, 0.0 ! !END!
4571 ! X = 389.67800, 6957.63800, 480.6, 0.0 ! !END!
4572 ! X = 389.77800, 6957.63800, 481.2, 0.0 ! !END!
4573 ! X = 389.87800, 6957.63800, 482.1, 0.0 ! !END!
4574 ! X = 389.97800, 6957.63800, 483.3, 0.0 ! !END!
4575 ! X = 390.07800, 6957.63800, 488.7, 0.0 ! !END!
4576 ! X = 390.17800, 6957.63800, 490.0, 0.0 ! !END!
4577 ! X = 390.27800, 6957.63800, 494.7, 0.0 ! !END!
4578 ! X = 390.37800, 6957.63800, 494.0, 0.0 ! !END!
4579 ! X = 390.47800, 6957.63800, 486.9, 0.0 ! !END!
4580 ! X = 390.57800, 6957.63800, 486.9, 0.0 ! !END!
4581 ! X = 390.67800, 6957.63800, 485.4, 0.0 ! !END!
4582 ! X = 390.77800, 6957.63800, 486.0, 0.0 ! !END!
4583 ! X = 390.87800, 6957.63800, 486.4, 0.0 ! !END!
4584 ! X = 390.97800, 6957.63800, 487.2, 0.0 ! !END!
4585 ! X = 391.07800, 6957.63800, 490.7, 0.0 ! !END!
4586 ! X = 391.17800, 6957.63800, 491.3, 0.0 ! !END!
4587 ! X = 391.27800, 6957.63800, 492.8, 0.0 ! !END!
4588 ! X = 391.37800, 6957.63800, 493.3, 0.0 ! !END!
4589 ! X = 391.47800, 6957.63800, 495.4, 0.0 ! !END!
4590 ! X = 391.57800, 6957.63800, 496.8, 0.0 ! !END!
4591 ! X = 391.67800, 6957.63800, 503.2, 0.0 ! !END!
4592 ! X = 391.77800, 6957.63800, 504.4, 0.0 ! !END!
4593 ! X = 391.87800, 6957.63800, 507.4, 0.0 ! !END!
4594 ! X = 391.97800, 6957.63800, 508.6, 0.0 ! !END!
4595 ! X = 392.07800, 6957.63800, 512.1, 0.0 ! !END!
4596 ! X = 404.07800, 6957.63800, 307.7, 0.0 ! !END!
4597 ! X = 404.17800, 6957.63800, 312.8, 0.0 ! !END!
4598 ! X = 404.27800, 6957.63800, 345.3, 0.0 ! !END!
4599 ! X = 404.37800, 6957.63800, 344.7, 0.0 ! !END!
4600 ! X = 404.47800, 6957.63800, 328.0, 0.0 ! !END!
4601 ! X = 404.57800, 6957.63800, 319.9, 0.0 ! !END!
4602 ! X = 404.67800, 6957.63800, 274.1, 0.0 ! !END!
4603 ! X = 404.77800, 6957.63800, 269.6, 0.0 ! !END!
4604 ! X = 404.87800, 6957.63800, 254.9, 0.0 ! !END!
4605 ! X = 386.87800, 6957.53800, 463.6, 0.0 ! !END!
4606 ! X = 386.97800, 6957.53800, 465.0, 0.0 ! !END!
4607 ! X = 387.07800, 6957.53800, 468.4, 0.0 ! !END!
4608 ! X = 387.17800, 6957.53800, 471.6, 0.0 ! !END!
4609 ! X = 387.27800, 6957.53800, 478.3, 0.0 ! !END!
4610 ! X = 387.37800, 6957.53800, 481.4, 0.0 ! !END!
4611 ! X = 387.47800, 6957.53800, 485.5, 0.0 ! !END!
4612 ! X = 387.57800, 6957.53800, 485.6, 0.0 ! !END!
4613 ! X = 387.67800, 6957.53800, 484.3, 0.0 ! !END!
4614 ! X = 387.77800, 6957.53800, 483.0, 0.0 ! !END!
4615 ! X = 387.87800, 6957.53800, 482.7, 0.0 ! !END!
4616 ! X = 387.97800, 6957.53800, 481.7, 0.0 ! !END!
4617 ! X = 388.07800, 6957.53800, 479.8, 0.0 ! !END!
4618 ! X = 388.17800, 6957.53800, 477.9, 0.0 ! !END!
4619 ! X = 388.27800, 6957.53800, 474.0, 0.0 ! !END!
4620 ! X = 388.37800, 6957.53800, 474.4, 0.0 ! !END!
4621 ! X = 388.47800, 6957.53800, 479.1, 0.0 ! !END!
4622 ! X = 388.57800, 6957.53800, 482.4, 0.0 ! !END!
4623 ! X = 388.67800, 6957.53800, 488.7, 0.0 ! !END!
4624 ! X = 388.77800, 6957.53800, 488.6, 0.0 ! !END!
4625 ! X = 388.87800, 6957.53800, 484.6, 0.0 ! !END!
4626 ! X = 388.87800, 6957.53800, 484.6, 0.0 ! !END!
4627 ! X = 388.97800, 6957.53800, 482.8, 0.0 ! !END!
4628 ! X = 388.97800, 6957.53800, 482.8, 0.0 ! !END!
4629 ! X = 389.07800, 6957.53800, 481.1, 0.0 ! !END!
4630 ! X = 389.07800, 6957.53800, 481.1, 0.0 ! !END!
4631 ! X = 389.17800, 6957.53800, 480.7, 0.0 ! !END!
4632 ! X = 389.17800, 6957.53800, 480.7, 0.0 ! !END!
4633 ! X = 389.27800, 6957.53800, 480.4, 0.0 ! !END!
4634 ! X = 389.27800, 6957.53800, 480.4, 0.0 ! !END!

4635 ! X = 389.37800, 6957.53800, 480.6, 0.0 ! !END!
4636 ! X = 389.37800, 6957.53800, 480.6, 0.0 ! !END!
4637 ! X = 389.47800, 6957.53800, 481.3, 0.0 ! !END!
4638 ! X = 389.47800, 6957.53800, 481.3, 0.0 ! !END!
4639 ! X = 389.57800, 6957.53800, 481.9, 0.0 ! !END!
4640 ! X = 389.57800, 6957.53800, 481.9, 0.0 ! !END!
4641 ! X = 389.67800, 6957.53800, 482.7, 0.0 ! !END!
4642 ! X = 389.67800, 6957.53800, 482.7, 0.0 ! !END!
4643 ! X = 389.77800, 6957.53800, 483.3, 0.0 ! !END!
4644 ! X = 389.87800, 6957.53800, 484.1, 0.0 ! !END!
4645 ! X = 389.97800, 6957.53800, 485.5, 0.0 ! !END!
4646 ! X = 390.07800, 6957.53800, 488.0, 0.0 ! !END!
4647 ! X = 390.17800, 6957.53800, 490.5, 0.0 ! !END!
4648 ! X = 390.27800, 6957.53800, 494.0, 0.0 ! !END!
4649 ! X = 390.37800, 6957.53800, 494.2, 0.0 ! !END!
4650 ! X = 390.47800, 6957.53800, 494.5, 0.0 ! !END!
4651 ! X = 390.57800, 6957.53800, 493.2, 0.0 ! !END!
4652 ! X = 390.67800, 6957.53800, 492.2, 0.0 ! !END!
4653 ! X = 390.77800, 6957.53800, 491.4, 0.0 ! !END!
4654 ! X = 390.87800, 6957.53800, 489.5, 0.0 ! !END!
4655 ! X = 390.97800, 6957.53800, 489.9, 0.0 ! !END!
4656 ! X = 391.07800, 6957.53800, 490.9, 0.0 ! !END!
4657 ! X = 391.17800, 6957.53800, 491.9, 0.0 ! !END!
4658 ! X = 391.27800, 6957.53800, 492.9, 0.0 ! !END!
4659 ! X = 391.37800, 6957.53800, 493.8, 0.0 ! !END!
4660 ! X = 391.47800, 6957.53800, 495.7, 0.0 ! !END!
4661 ! X = 391.57800, 6957.53800, 498.2, 0.0 ! !END!
4662 ! X = 391.67800, 6957.53800, 503.6, 0.0 ! !END!
4663 ! X = 391.77800, 6957.53800, 506.3, 0.0 ! !END!
4664 ! X = 391.87800, 6957.53800, 510.6, 0.0 ! !END!
4665 ! X = 391.97800, 6957.53800, 512.6, 0.0 ! !END!
4666 ! X = 392.07800, 6957.53800, 516.9, 0.0 ! !END!
4667 ! X = 392.17800, 6957.53800, 520.2, 0.0 ! !END!
4668 ! X = 403.87800, 6957.53800, 299.6, 0.0 ! !END!
4669 ! X = 403.97800, 6957.53800, 301.8, 0.0 ! !END!
4670 ! X = 404.07800, 6957.53800, 308.3, 0.0 ! !END!
4671 ! X = 404.17800, 6957.53800, 315.9, 0.0 ! !END!
4672 ! X = 404.27800, 6957.53800, 330.4, 0.0 ! !END!
4673 ! X = 404.37800, 6957.53800, 334.1, 0.0 ! !END!
4674 ! X = 404.47800, 6957.53800, 330.6, 0.0 ! !END!
4675 ! X = 404.57800, 6957.53800, 317.5, 0.0 ! !END!
4676 ! X = 404.67800, 6957.53800, 295.7, 0.0 ! !END!
4677 ! X = 404.77800, 6957.53800, 282.5, 0.0 ! !END!
4678 ! X = 404.87800, 6957.53800, 268.4, 0.0 ! !END!
4679 ! X = 404.97800, 6957.53800, 261.7, 0.0 ! !END!
4680 ! X = 405.07800, 6957.53800, 250.2, 0.0 ! !END!
4681 ! X = 405.17800, 6957.53800, 247.4, 0.0 ! !END!
4682 ! X = 387.27800, 6957.43800, 482.3, 0.0 ! !END!
4683 ! X = 387.37800, 6957.43800, 484.3, 0.0 ! !END!
4684 ! X = 387.47800, 6957.43800, 490.9, 0.0 ! !END!
4685 ! X = 387.57800, 6957.43800, 490.8, 0.0 ! !END!
4686 ! X = 387.67800, 6957.43800, 487.5, 0.0 ! !END!
4687 ! X = 387.77800, 6957.43800, 487.6, 0.0 ! !END!
4688 ! X = 387.87800, 6957.43800, 489.0, 0.0 ! !END!
4689 ! X = 387.97800, 6957.43800, 488.5, 0.0 ! !END!
4690 ! X = 388.07800, 6957.43800, 485.1, 0.0 ! !END!
4691 ! X = 388.17800, 6957.43800, 483.2, 0.0 ! !END!
4692 ! X = 388.27800, 6957.43800, 474.3, 0.0 ! !END!
4693 ! X = 388.37800, 6957.43800, 475.3, 0.0 ! !END!
4694 ! X = 388.47800, 6957.43800, 484.0, 0.0 ! !END!
4695 ! X = 388.57800, 6957.43800, 486.4, 0.0 ! !END!
4696 ! X = 388.67800, 6957.43800, 497.1, 0.0 ! !END!
4697 ! X = 388.77800, 6957.43800, 496.2, 0.0 ! !END!
4698 ! X = 388.87800, 6957.43800, 487.2, 0.0 ! !END!
4699 ! X = 388.97800, 6957.43800, 486.5, 0.0 ! !END!
4700 ! X = 388.97800, 6957.43800, 486.5, 0.0 ! !END!
4701 ! X = 389.07800, 6957.43800, 484.1, 0.0 ! !END!
4702 ! X = 389.07800, 6957.43800, 484.1, 0.0 ! !END!
4703 ! X = 389.17800, 6957.43800, 484.2, 0.0 ! !END!
4704 ! X = 389.17800, 6957.43800, 484.2, 0.0 ! !END!
4705 ! X = 389.27800, 6957.43800, 482.4, 0.0 ! !END!

4706 ! X = 389.27800, 6957.43800, 482.4, 0.0 ! !END!
4707 ! X = 389.37800, 6957.43800, 483.4, 0.0 ! !END!
4708 ! X = 389.37800, 6957.43800, 483.4, 0.0 ! !END!
4709 ! X = 389.47800, 6957.43800, 484.4, 0.0 ! !END!
4710 ! X = 389.47800, 6957.43800, 484.4, 0.0 ! !END!
4711 ! X = 389.57800, 6957.43800, 485.3, 0.0 ! !END!
4712 ! X = 389.57800, 6957.43800, 485.3, 0.0 ! !END!
4713 ! X = 389.67800, 6957.43800, 484.8, 0.0 ! !END!
4714 ! X = 389.77800, 6957.43800, 485.3, 0.0 ! !END!
4715 ! X = 389.87800, 6957.43800, 485.7, 0.0 ! !END!
4716 ! X = 389.97800, 6957.43800, 486.5, 0.0 ! !END!
4717 ! X = 390.07800, 6957.43800, 488.8, 0.0 ! !END!
4718 ! X = 390.17800, 6957.43800, 490.3, 0.0 ! !END!
4719 ! X = 390.27800, 6957.43800, 494.8, 0.0 ! !END!
4720 ! X = 390.37800, 6957.43800, 496.8, 0.0 ! !END!
4721 ! X = 390.47800, 6957.43800, 499.2, 0.0 ! !END!
4722 ! X = 390.57800, 6957.43800, 500.1, 0.0 ! !END!
4723 ! X = 390.67800, 6957.43800, 497.0, 0.0 ! !END!
4724 ! X = 390.77800, 6957.43800, 497.0, 0.0 ! !END!
4725 ! X = 390.87800, 6957.43800, 491.4, 0.0 ! !END!
4726 ! X = 390.97800, 6957.43800, 492.0, 0.0 ! !END!
4727 ! X = 391.07800, 6957.43800, 492.4, 0.0 ! !END!
4728 ! X = 391.17800, 6957.43800, 493.2, 0.0 ! !END!
4729 ! X = 391.27800, 6957.43800, 493.5, 0.0 ! !END!
4730 ! X = 391.37800, 6957.43800, 494.1, 0.0 ! !END!
4731 ! X = 391.47800, 6957.43800, 495.9, 0.0 ! !END!
4732 ! X = 391.57800, 6957.43800, 497.6, 0.0 ! !END!
4733 ! X = 391.67800, 6957.43800, 505.7, 0.0 ! !END!
4734 ! X = 391.77800, 6957.43800, 507.3, 0.0 ! !END!
4735 ! X = 391.87800, 6957.43800, 513.3, 0.0 ! !END!
4736 ! X = 391.97800, 6957.43800, 514.6, 0.0 ! !END!
4737 ! X = 392.07800, 6957.43800, 520.3, 0.0 ! !END!
4738 ! X = 392.17800, 6957.43800, 522.7, 0.0 ! !END!
4739 ! X = 392.27800, 6957.43800, 533.5, 0.0 ! !END!
4740 ! X = 403.57800, 6957.43800, 276.4, 0.0 ! !END!
4741 ! X = 403.67800, 6957.43800, 283.8, 0.0 ! !END!
4742 ! X = 403.77800, 6957.43800, 286.9, 0.0 ! !END!
4743 ! X = 403.87800, 6957.43800, 291.9, 0.0 ! !END!
4744 ! X = 403.97800, 6957.43800, 296.4, 0.0 ! !END!
4745 ! X = 404.07800, 6957.43800, 309.6, 0.0 ! !END!
4746 ! X = 404.17800, 6957.43800, 312.4, 0.0 ! !END!
4747 ! X = 404.27800, 6957.43800, 327.9, 0.0 ! !END!
4748 ! X = 404.37800, 6957.43800, 328.5, 0.0 ! !END!
4749 ! X = 404.47800, 6957.43800, 330.5, 0.0 ! !END!
4750 ! X = 404.57800, 6957.43800, 324.1, 0.0 ! !END!
4751 ! X = 404.67800, 6957.43800, 296.9, 0.0 ! !END!
4752 ! X = 404.77800, 6957.43800, 289.3, 0.0 ! !END!
4753 ! X = 404.87800, 6957.43800, 272.2, 0.0 ! !END!
4754 ! X = 404.87800, 6957.43800, 272.2, 0.0 ! !END!
4755 ! X = 404.97800, 6957.43800, 265.9, 0.0 ! !END!
4756 ! X = 404.97800, 6957.43800, 265.9, 0.0 ! !END!
4757 ! X = 405.07800, 6957.43800, 247.8, 0.0 ! !END!
4758 ! X = 405.07800, 6957.43800, 247.8, 0.0 ! !END!
4759 ! X = 405.17800, 6957.43800, 244.5, 0.0 ! !END!
4760 ! X = 405.17800, 6957.43800, 244.5, 0.0 ! !END!
4761 ! X = 405.27800, 6957.43800, 237.1, 0.0 ! !END!
4762 ! X = 405.27800, 6957.43800, 237.1, 0.0 ! !END!
4763 ! X = 405.37800, 6957.43800, 236.2, 0.0 ! !END!
4764 ! X = 405.37800, 6957.43800, 236.2, 0.0 ! !END!
4765 ! X = 387.87800, 6957.33800, 491.0, 0.0 ! !END!
4766 ! X = 387.97800, 6957.33800, 490.3, 0.0 ! !END!
4767 ! X = 388.07800, 6957.33800, 488.5, 0.0 ! !END!
4768 ! X = 388.17800, 6957.33800, 485.2, 0.0 ! !END!
4769 ! X = 388.27800, 6957.33800, 479.9, 0.0 ! !END!
4770 ! X = 388.37800, 6957.33800, 479.9, 0.0 ! !END!
4771 ! X = 388.47800, 6957.33800, 483.7, 0.0 ! !END!
4772 ! X = 388.57800, 6957.33800, 488.0, 0.0 ! !END!
4773 ! X = 388.67800, 6957.33800, 493.7, 0.0 ! !END!
4774 ! X = 388.77800, 6957.33800, 494.4, 0.0 ! !END!
4775 ! X = 388.87800, 6957.33800, 493.3, 0.0 ! !END!
4776 ! X = 388.97800, 6957.33800, 491.3, 0.0 ! !END!

4777 ! X = 389.07800, 6957.33800, 490.1, 0.0 ! !END!
4778 ! X = 389.17800, 6957.33800, 489.2, 0.0 ! !END!
4779 ! X = 389.17800, 6957.33800, 489.2, 0.0 ! !END!
4780 ! X = 389.27800, 6957.33800, 488.6, 0.0 ! !END!
4781 ! X = 389.27800, 6957.33800, 488.6, 0.0 ! !END!
4782 ! X = 389.37800, 6957.33800, 489.2, 0.0 ! !END!
4783 ! X = 389.37800, 6957.33800, 489.2, 0.0 ! !END!
4784 ! X = 389.47800, 6957.33800, 492.0, 0.0 ! !END!
4785 ! X = 389.47800, 6957.33800, 492.0, 0.0 ! !END!
4786 ! X = 389.57800, 6957.33800, 492.2, 0.0 ! !END!
4787 ! X = 389.67800, 6957.33800, 491.1, 0.0 ! !END!
4788 ! X = 389.77800, 6957.33800, 490.3, 0.0 ! !END!
4789 ! X = 389.87800, 6957.33800, 488.6, 0.0 ! !END!
4790 ! X = 390.47800, 6957.33800, 507.0, 0.0 ! !END!
4791 ! X = 390.57800, 6957.33800, 508.0, 0.0 ! !END!
4792 ! X = 390.67800, 6957.33800, 508.7, 0.0 ! !END!
4793 ! X = 390.77800, 6957.33800, 506.5, 0.0 ! !END!
4794 ! X = 390.87800, 6957.33800, 502.4, 0.0 ! !END!
4795 ! X = 390.97800, 6957.33800, 500.7, 0.0 ! !END!
4796 ! X = 391.07800, 6957.33800, 499.0, 0.0 ! !END!
4797 ! X = 391.17800, 6957.33800, 498.5, 0.0 ! !END!
4798 ! X = 391.27800, 6957.33800, 496.9, 0.0 ! !END!
4799 ! X = 391.37800, 6957.33800, 496.7, 0.0 ! !END!
4800 ! X = 391.47800, 6957.33800, 496.7, 0.0 ! !END!
4801 ! X = 391.57800, 6957.33800, 499.2, 0.0 ! !END!
4802 ! X = 391.67800, 6957.33800, 504.9, 0.0 ! !END!
4803 ! X = 391.77800, 6957.33800, 508.1, 0.0 ! !END!
4804 ! X = 391.87800, 6957.33800, 511.8, 0.0 ! !END!
4805 ! X = 391.97800, 6957.33800, 514.6, 0.0 ! !END!
4806 ! X = 392.07800, 6957.33800, 519.8, 0.0 ! !END!
4807 ! X = 392.17800, 6957.33800, 524.6, 0.0 ! !END!
4808 ! X = 392.27800, 6957.33800, 534.6, 0.0 ! !END!
4809 ! X = 392.37800, 6957.33800, 539.8, 0.0 ! !END!
4810 ! X = 403.37800, 6957.33800, 278.5, 0.0 ! !END!
4811 ! X = 403.47800, 6957.33800, 274.9, 0.0 ! !END!
4812 ! X = 403.57800, 6957.33800, 276.6, 0.0 ! !END!
4813 ! X = 403.67800, 6957.33800, 286.5, 0.0 ! !END!
4814 ! X = 403.77800, 6957.33800, 291.4, 0.0 ! !END!
4815 ! X = 403.87800, 6957.33800, 300.0, 0.0 ! !END!
4816 ! X = 403.97800, 6957.33800, 304.7, 0.0 ! !END!
4817 ! X = 404.07800, 6957.33800, 309.8, 0.0 ! !END!
4818 ! X = 404.17800, 6957.33800, 313.3, 0.0 ! !END!
4819 ! X = 404.27800, 6957.33800, 312.2, 0.0 ! !END!
4820 ! X = 404.37800, 6957.33800, 315.3, 0.0 ! !END!
4821 ! X = 404.47800, 6957.33800, 316.8, 0.0 ! !END!
4822 ! X = 404.57800, 6957.33800, 310.1, 0.0 ! !END!
4823 ! X = 404.67800, 6957.33800, 291.0, 0.0 ! !END!
4824 ! X = 404.77800, 6957.33800, 279.9, 0.0 ! !END!
4825 ! X = 404.77800, 6957.33800, 279.9, 0.0 ! !END!
4826 ! X = 404.87800, 6957.33800, 266.1, 0.0 ! !END!
4827 ! X = 404.87800, 6957.33800, 266.1, 0.0 ! !END!
4828 ! X = 404.97800, 6957.33800, 257.8, 0.0 ! !END!
4829 ! X = 404.97800, 6957.33800, 257.8, 0.0 ! !END!
4830 ! X = 405.07800, 6957.33800, 247.6, 0.0 ! !END!
4831 ! X = 405.07800, 6957.33800, 247.6, 0.0 ! !END!
4832 ! X = 405.17800, 6957.33800, 242.0, 0.0 ! !END!
4833 ! X = 405.17800, 6957.33800, 242.0, 0.0 ! !END!
4834 ! X = 405.27800, 6957.33800, 236.6, 0.0 ! !END!
4835 ! X = 405.27800, 6957.33800, 236.6, 0.0 ! !END!
4836 ! X = 405.37800, 6957.33800, 234.2, 0.0 ! !END!
4837 ! X = 405.37800, 6957.33800, 234.2, 0.0 ! !END!
4838 ! X = 405.47800, 6957.33800, 231.0, 0.0 ! !END!
4839 ! X = 405.47800, 6957.33800, 231.0, 0.0 ! !END!
4840 ! X = 390.77800, 6957.23800, 518.4, 0.0 ! !END!
4841 ! X = 390.87800, 6957.23800, 508.6, 0.0 ! !END!
4842 ! X = 390.97800, 6957.23800, 508.8, 0.0 ! !END!
4843 ! X = 391.07800, 6957.23800, 503.9, 0.0 ! !END!
4844 ! X = 391.17800, 6957.23800, 503.6, 0.0 ! !END!
4845 ! X = 391.27800, 6957.23800, 499.0, 0.0 ! !END!
4846 ! X = 391.37800, 6957.23800, 498.7, 0.0 ! !END!
4847 ! X = 391.47800, 6957.23800, 496.7, 0.0 ! !END!

4848 ! X = 391.57800, 6957.23800, 498.0, 0.0 ! !END!
4849 ! X = 391.67800, 6957.23800, 506.9, 0.0 ! !END!
4850 ! X = 391.77800, 6957.23800, 507.8, 0.0 ! !END!
4851 ! X = 391.87800, 6957.23800, 511.6, 0.0 ! !END!
4852 ! X = 391.97800, 6957.23800, 513.0, 0.0 ! !END!
4853 ! X = 392.07800, 6957.23800, 520.4, 0.0 ! !END!
4854 ! X = 392.17800, 6957.23800, 523.2, 0.0 ! !END!
4855 ! X = 392.27800, 6957.23800, 537.2, 0.0 ! !END!
4856 ! X = 392.37800, 6957.23800, 541.5, 0.0 ! !END!
4857 ! X = 403.27800, 6957.23800, 279.5, 0.0 ! !END!
4858 ! X = 403.37800, 6957.23800, 277.5, 0.0 ! !END!
4859 ! X = 403.47800, 6957.23800, 270.2, 0.0 ! !END!
4860 ! X = 403.57800, 6957.23800, 272.4, 0.0 ! !END!
4861 ! X = 403.67800, 6957.23800, 291.6, 0.0 ! !END!
4862 ! X = 403.77800, 6957.23800, 294.4, 0.0 ! !END!
4863 ! X = 403.87800, 6957.23800, 307.7, 0.0 ! !END!
4864 ! X = 403.97800, 6957.23800, 307.3, 0.0 ! !END!
4865 ! X = 404.07800, 6957.23800, 313.0, 0.0 ! !END!
4866 ! X = 404.17800, 6957.23800, 309.9, 0.0 ! !END!
4867 ! X = 404.27800, 6957.23800, 302.5, 0.0 ! !END!
4868 ! X = 404.37800, 6957.23800, 303.3, 0.0 ! !END!
4869 ! X = 404.47800, 6957.23800, 312.5, 0.0 ! !END!
4870 ! X = 404.57800, 6957.23800, 308.4, 0.0 ! !END!
4871 ! X = 404.67800, 6957.23800, 278.7, 0.0 ! !END!
4872 ! X = 404.77800, 6957.23800, 274.2, 0.0 ! !END!
4873 ! X = 404.77800, 6957.23800, 274.2, 0.0 ! !END!
4874 ! X = 404.87800, 6957.23800, 256.9, 0.0 ! !END!
4875 ! X = 404.87800, 6957.23800, 256.9, 0.0 ! !END!
4876 ! X = 404.97800, 6957.23800, 254.9, 0.0 ! !END!
4877 ! X = 404.97800, 6957.23800, 254.9, 0.0 ! !END!
4878 ! X = 405.07800, 6957.23800, 243.4, 0.0 ! !END!
4879 ! X = 405.07800, 6957.23800, 243.4, 0.0 ! !END!
4880 ! X = 405.17800, 6957.23800, 242.6, 0.0 ! !END!
4881 ! X = 405.17800, 6957.23800, 242.6, 0.0 ! !END!
4882 ! X = 405.27800, 6957.23800, 235.4, 0.0 ! !END!
4883 ! X = 405.27800, 6957.23800, 235.4, 0.0 ! !END!
4884 ! X = 405.37800, 6957.23800, 234.3, 0.0 ! !END!
4885 ! X = 405.37800, 6957.23800, 234.3, 0.0 ! !END!
4886 ! X = 405.47800, 6957.23800, 227.3, 0.0 ! !END!
4887 ! X = 405.47800, 6957.23800, 227.3, 0.0 ! !END!
4888 ! X = 405.57800, 6957.23800, 226.8, 0.0 ! !END!
4889 ! X = 405.57800, 6957.23800, 226.8, 0.0 ! !END!
4890 ! X = 391.17800, 6957.13800, 513.3, 0.0 ! !END!
4891 ! X = 391.27800, 6957.13800, 505.9, 0.0 ! !END!
4892 ! X = 391.37800, 6957.13800, 503.4, 0.0 ! !END!
4893 ! X = 391.47800, 6957.13800, 500.3, 0.0 ! !END!
4894 ! X = 391.57800, 6957.13800, 501.1, 0.0 ! !END!
4895 ! X = 391.67800, 6957.13800, 502.7, 0.0 ! !END!
4896 ! X = 391.77800, 6957.13800, 505.1, 0.0 ! !END!
4897 ! X = 391.87800, 6957.13800, 508.5, 0.0 ! !END!
4898 ! X = 391.97800, 6957.13800, 511.7, 0.0 ! !END!
4899 ! X = 392.07800, 6957.13800, 518.2, 0.0 ! !END!
4900 ! X = 392.17800, 6957.13800, 523.6, 0.0 ! !END!
4901 ! X = 392.27800, 6957.13800, 533.1, 0.0 ! !END!
4902 ! X = 392.37800, 6957.13800, 541.5, 0.0 ! !END!
4903 ! X = 403.17800, 6957.13800, 268.8, 0.0 ! !END!
4904 ! X = 403.27800, 6957.13800, 268.0, 0.0 ! !END!
4905 ! X = 403.37800, 6957.13800, 267.3, 0.0 ! !END!
4906 ! X = 403.47800, 6957.13800, 266.0, 0.0 ! !END!
4907 ! X = 403.57800, 6957.13800, 270.4, 0.0 ! !END!
4908 ! X = 403.67800, 6957.13800, 283.5, 0.0 ! !END!
4909 ! X = 403.77800, 6957.13800, 290.7, 0.0 ! !END!
4910 ! X = 403.87800, 6957.13800, 296.0, 0.0 ! !END!
4911 ! X = 403.97800, 6957.13800, 298.2, 0.0 ! !END!
4912 ! X = 404.07800, 6957.13800, 296.3, 0.0 ! !END!
4913 ! X = 404.17800, 6957.13800, 295.4, 0.0 ! !END!
4914 ! X = 404.27800, 6957.13800, 295.5, 0.0 ! !END!
4915 ! X = 404.37800, 6957.13800, 297.7, 0.0 ! !END!
4916 ! X = 404.47800, 6957.13800, 304.1, 0.0 ! !END!
4917 ! X = 404.57800, 6957.13800, 299.8, 0.0 ! !END!
4918 ! X = 404.67800, 6957.13800, 286.8, 0.0 ! !END!

4919 ! X = 404.67800, 6957.13800, 286.8, 0.0 ! !END!
4920 ! X = 404.77800, 6957.13800, 276.4, 0.0 ! !END!
4921 ! X = 404.77800, 6957.13800, 276.4, 0.0 ! !END!
4922 ! X = 404.87800, 6957.13800, 263.9, 0.0 ! !END!
4923 ! X = 404.87800, 6957.13800, 263.9, 0.0 ! !END!
4924 ! X = 404.97800, 6957.13800, 258.1, 0.0 ! !END!
4925 ! X = 404.97800, 6957.13800, 258.1, 0.0 ! !END!
4926 ! X = 405.07800, 6957.13800, 253.0, 0.0 ! !END!
4927 ! X = 405.07800, 6957.13800, 253.0, 0.0 ! !END!
4928 ! X = 405.17800, 6957.13800, 249.4, 0.0 ! !END!
4929 ! X = 405.17800, 6957.13800, 249.4, 0.0 ! !END!
4930 ! X = 405.27800, 6957.13800, 244.0, 0.0 ! !END!
4931 ! X = 405.27800, 6957.13800, 244.0, 0.0 ! !END!
4932 ! X = 405.37800, 6957.13800, 239.6, 0.0 ! !END!
4933 ! X = 405.37800, 6957.13800, 239.6, 0.0 ! !END!
4934 ! X = 405.47800, 6957.13800, 231.0, 0.0 ! !END!
4935 ! X = 405.47800, 6957.13800, 231.0, 0.0 ! !END!
4936 ! X = 405.57800, 6957.13800, 228.1, 0.0 ! !END!
4937 ! X = 405.57800, 6957.13800, 228.1, 0.0 ! !END!
4938 ! X = 405.67800, 6957.13800, 223.8, 0.0 ! !END!
4939 ! X = 391.27800, 6957.03800, 508.0, 0.0 ! !END!
4940 ! X = 391.37800, 6957.03800, 506.4, 0.0 ! !END!
4941 ! X = 391.47800, 6957.03800, 501.8, 0.0 ! !END!
4942 ! X = 391.57800, 6957.03800, 501.6, 0.0 ! !END!
4943 ! X = 391.67800, 6957.03800, 501.5, 0.0 ! !END!
4944 ! X = 391.77800, 6957.03800, 502.7, 0.0 ! !END!
4945 ! X = 391.87800, 6957.03800, 507.4, 0.0 ! !END!
4946 ! X = 391.97800, 6957.03800, 509.5, 0.0 ! !END!
4947 ! X = 392.07800, 6957.03800, 518.9, 0.0 ! !END!
4948 ! X = 392.17800, 6957.03800, 521.8, 0.0 ! !END!
4949 ! X = 392.27800, 6957.03800, 533.5, 0.0 ! !END!
4950 ! X = 392.37800, 6957.03800, 538.0, 0.0 ! !END!
4951 ! X = 403.07800, 6957.03800, 266.4, 0.0 ! !END!
4952 ! X = 403.17800, 6957.03800, 265.5, 0.0 ! !END!
4953 ! X = 403.27800, 6957.03800, 262.0, 0.0 ! !END!
4954 ! X = 403.37800, 6957.03800, 261.6, 0.0 ! !END!
4955 ! X = 403.47800, 6957.03800, 260.0, 0.0 ! !END!
4956 ! X = 403.57800, 6957.03800, 263.3, 0.0 ! !END!
4957 ! X = 403.67800, 6957.03800, 284.6, 0.0 ! !END!
4958 ! X = 403.77800, 6957.03800, 285.8, 0.0 ! !END!
4959 ! X = 403.87800, 6957.03800, 291.2, 0.0 ! !END!
4960 ! X = 403.97800, 6957.03800, 290.5, 0.0 ! !END!
4961 ! X = 404.07800, 6957.03800, 285.6, 0.0 ! !END!
4962 ! X = 404.17800, 6957.03800, 288.3, 0.0 ! !END!
4963 ! X = 404.27800, 6957.03800, 291.5, 0.0 ! !END!
4964 ! X = 404.37800, 6957.03800, 296.9, 0.0 ! !END!
4965 ! X = 404.47800, 6957.03800, 305.8, 0.0 ! !END!
4966 ! X = 404.57800, 6957.03800, 307.7, 0.0 ! !END!
4967 ! X = 404.67800, 6957.03800, 288.3, 0.0 ! !END!
4968 ! X = 404.67800, 6957.03800, 288.3, 0.0 ! !END!
4969 ! X = 404.77800, 6957.03800, 286.9, 0.0 ! !END!
4970 ! X = 404.77800, 6957.03800, 286.9, 0.0 ! !END!
4971 ! X = 404.87800, 6957.03800, 264.8, 0.0 ! !END!
4972 ! X = 404.87800, 6957.03800, 264.8, 0.0 ! !END!
4973 ! X = 404.97800, 6957.03800, 264.6, 0.0 ! !END!
4974 ! X = 404.97800, 6957.03800, 264.6, 0.0 ! !END!
4975 ! X = 405.07800, 6957.03800, 258.1, 0.0 ! !END!
4976 ! X = 405.07800, 6957.03800, 258.1, 0.0 ! !END!
4977 ! X = 405.17800, 6957.03800, 256.8, 0.0 ! !END!
4978 ! X = 405.17800, 6957.03800, 256.8, 0.0 ! !END!
4979 ! X = 405.27800, 6957.03800, 248.2, 0.0 ! !END!
4980 ! X = 405.27800, 6957.03800, 248.2, 0.0 ! !END!
4981 ! X = 405.37800, 6957.03800, 244.7, 0.0 ! !END!
4982 ! X = 405.37800, 6957.03800, 244.7, 0.0 ! !END!
4983 ! X = 405.47800, 6957.03800, 230.6, 0.0 ! !END!
4984 ! X = 405.47800, 6957.03800, 230.6, 0.0 ! !END!
4985 ! X = 405.57800, 6957.03800, 228.0, 0.0 ! !END!
4986 ! X = 405.57800, 6957.03800, 228.0, 0.0 ! !END!
4987 ! X = 405.67800, 6957.03800, 221.2, 0.0 ! !END!
4988 ! X = 405.77800, 6957.03800, 220.1, 0.0 ! !END!
4989 ! X = 391.47800, 6956.93800, 505.8, 0.0 ! !END!

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4990 ! X =   391.57800,  6956.93800,   504.4,    0.0 !  !END!
4991 ! X =   391.67800,  6956.93800,   504.0,    0.0 !  !END!
4992 ! X =   391.77800,  6956.93800,   505.0,    0.0 !  !END!
4993 ! X =   391.87800,  6956.93800,   507.4,    0.0 !  !END!
4994 ! X =   391.97800,  6956.93800,   510.6,    0.0 !  !END!
4995 ! X =   392.07800,  6956.93800,   516.5,    0.0 !  !END!
4996 ! X =   392.17800,  6956.93800,   522.0,    0.0 !  !END!
4997 ! X =   392.27800,  6956.93800,   532.2,    0.0 !  !END!
4998 ! X =   402.97800,  6956.93800,   274.9,    0.0 !  !END!
4999 ! X =   403.07800,  6956.93800,   268.6,    0.0 !  !END!
5000 ! X =   403.17800,  6956.93800,   266.1,    0.0 !  !END!
5001 ! X =   403.27800,  6956.93800,   262.8,    0.0 !  !END!
5002 ! X =   403.37800,  6956.93800,   260.9,    0.0 !  !END!
5003 ! X =   403.47800,  6956.93800,   258.6,    0.0 !  !END!
5004 ! X =   403.57800,  6956.93800,   263.1,    0.0 !  !END!
5005 ! X =   403.67800,  6956.93800,   272.1,    0.0 !  !END!
5006 ! X =   403.77800,  6956.93800,   276.7,    0.0 !  !END!
5007 ! X =   403.87800,  6956.93800,   278.5,    0.0 !  !END!
5008 ! X =   403.97800,  6956.93800,   280.3,    0.0 !  !END!
5009 ! X =   404.07800,  6956.93800,   289.1,    0.0 !  !END!
5010 ! X =   404.17800,  6956.93800,   293.5,    0.0 !  !END!
5011 ! X =   404.27800,  6956.93800,   307.8,    0.0 !  !END!
5012 ! X =   404.37800,  6956.93800,   314.0,    0.0 !  !END!
5013 ! X =   404.47800,  6956.93800,   325.2,    0.0 !  !END!
5014 ! X =   404.57800,  6956.93800,   325.0,    0.0 !  !END!
5015 ! X =   404.67800,  6956.93800,   321.5,    0.0 !  !END!
5016 ! X =   404.67800,  6956.93800,   321.5,    0.0 !  !END!
5017 ! X =   404.77800,  6956.93800,   312.3,    0.0 !  !END!
5018 ! X =   404.77800,  6956.93800,   312.3,    0.0 !  !END!
5019 ! X =   404.87800,  6956.93800,   296.1,    0.0 !  !END!
5020 ! X =   404.87800,  6956.93800,   296.1,    0.0 !  !END!
5021 ! X =   404.97800,  6956.93800,   287.3,    0.0 !  !END!
5022 ! X =   404.97800,  6956.93800,   287.3,    0.0 !  !END!
5023 ! X =   405.07800,  6956.93800,   273.0,    0.0 !  !END!
5024 ! X =   405.07800,  6956.93800,   273.0,    0.0 !  !END!
5025 ! X =   405.17800,  6956.93800,   266.4,    0.0 !  !END!
5026 ! X =   405.17800,  6956.93800,   266.4,    0.0 !  !END!
5027 ! X =   405.27800,  6956.93800,   252.7,    0.0 !  !END!
5028 ! X =   405.27800,  6956.93800,   252.7,    0.0 !  !END!
5029 ! X =   405.37800,  6956.93800,   245.6,    0.0 !  !END!
5030 ! X =   405.37800,  6956.93800,   245.6,    0.0 !  !END!
5031 ! X =   405.47800,  6956.93800,   233.9,    0.0 !  !END!
5032 ! X =   405.47800,  6956.93800,   233.9,    0.0 !  !END!
5033 ! X =   405.57800,  6956.93800,   228.5,    0.0 !  !END!
5034 ! X =   405.57800,  6956.93800,   228.5,    0.0 !  !END!
5035 ! X =   405.67800,  6956.93800,   222.7,    0.0 !  !END!
5036 ! X =   405.77800,  6956.93800,   220.1,    0.0 !  !END!
5037 ! X =   405.87800,  6956.93800,   217.1,    0.0 !  !END!
5038 ! X =   391.57800,  6956.83800,   505.6,    0.0 !  !END!
5039 ! X =   391.67800,  6956.83800,   505.9,    0.0 !  !END!
5040 ! X =   391.77800,  6956.83800,   506.5,    0.0 !  !END!
5041 ! X =   391.87800,  6956.83800,   508.4,    0.0 !  !END!
5042 ! X =   391.97800,  6956.83800,   509.9,    0.0 !  !END!
5043 ! X =   392.07800,  6956.83800,   516.8,    0.0 !  !END!
5044 ! X =   392.17800,  6956.83800,   519.8,    0.0 !  !END!
5045 ! X =   392.27800,  6956.83800,   534.5,    0.0 !  !END!
5046 ! X =   402.87800,  6956.83800,   280.7,    0.0 !  !END!
5047 ! X =   402.97800,  6956.83800,   278.5,    0.0 !  !END!
5048 ! X =   403.07800,  6956.83800,   268.4,    0.0 !  !END!
5049 ! X =   403.17800,  6956.83800,   268.0,    0.0 !  !END!
5050 ! X =   403.27800,  6956.83800,   263.7,    0.0 !  !END!
5051 ! X =   403.37800,  6956.83800,   263.0,    0.0 !  !END!
5052 ! X =   403.47800,  6956.83800,   256.2,    0.0 !  !END!
5053 ! X =   403.57800,  6956.83800,   257.5,    0.0 !  !END!
5054 ! X =   403.67800,  6956.83800,   270.3,    0.0 !  !END!
5055 ! X =   403.77800,  6956.83800,   270.4,    0.0 !  !END!
5056 ! X =   403.87800,  6956.83800,   269.3,    0.0 !  !END!
5057 ! X =   403.97800,  6956.83800,   273.1,    0.0 !  !END!
5058 ! X =   404.07800,  6956.83800,   292.1,    0.0 !  !END!
5059 ! X =   404.17800,  6956.83800,   298.9,    0.0 !  !END!
5060 ! X =   404.27800,  6956.83800,   322.4,    0.0 !  !END!
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5061 ! X = 404.37800, 6956.83800, 328.7, 0.0 ! !END!
5062 ! X = 404.47800, 6956.83800, 342.9, 0.0 ! !END!
5063 ! X = 404.57800, 6956.83800, 346.1, 0.0 ! !END!
5064 ! X = 404.67800, 6956.83800, 342.1, 0.0 ! !END!
5065 ! X = 404.67800, 6956.83800, 342.1, 0.0 ! !END!
5066 ! X = 404.77800, 6956.83800, 338.4, 0.0 ! !END!
5067 ! X = 404.77800, 6956.83800, 338.4, 0.0 ! !END!
5068 ! X = 404.87800, 6956.83800, 310.3, 0.0 ! !END!
5069 ! X = 404.87800, 6956.83800, 310.3, 0.0 ! !END!
5070 ! X = 404.97800, 6956.83800, 303.0, 0.0 ! !END!
5071 ! X = 404.97800, 6956.83800, 303.0, 0.0 ! !END!
5072 ! X = 405.07800, 6956.83800, 278.2, 0.0 ! !END!
5073 ! X = 405.07800, 6956.83800, 278.2, 0.0 ! !END!
5074 ! X = 405.17800, 6956.83800, 271.7, 0.0 ! !END!
5075 ! X = 405.17800, 6956.83800, 271.7, 0.0 ! !END!
5076 ! X = 405.27800, 6956.83800, 251.3, 0.0 ! !END!
5077 ! X = 405.27800, 6956.83800, 251.3, 0.0 ! !END!
5078 ! X = 405.37800, 6956.83800, 247.2, 0.0 ! !END!
5079 ! X = 405.37800, 6956.83800, 247.2, 0.0 ! !END!
5080 ! X = 405.47800, 6956.83800, 231.6, 0.0 ! !END!
5081 ! X = 405.47800, 6956.83800, 231.6, 0.0 ! !END!
5082 ! X = 405.57800, 6956.83800, 230.1, 0.0 ! !END!
5083 ! X = 405.57800, 6956.83800, 230.1, 0.0 ! !END!
5084 ! X = 405.67800, 6956.83800, 222.4, 0.0 ! !END!
5085 ! X = 405.77800, 6956.83800, 222.1, 0.0 ! !END!
5086 ! X = 405.87800, 6956.83800, 217.3, 0.0 ! !END!
5087 ! X = 405.97800, 6956.83800, 216.8, 0.0 ! !END!
5088 ! X = 391.77800, 6956.73800, 509.5, 0.0 ! !END!
5089 ! X = 391.87800, 6956.73800, 510.1, 0.0 ! !END!
5090 ! X = 391.97800, 6956.73800, 512.0, 0.0 ! !END!
5091 ! X = 392.07800, 6956.73800, 516.1, 0.0 ! !END!
5092 ! X = 402.77800, 6956.73800, 293.4, 0.0 ! !END!
5093 ! X = 402.87800, 6956.73800, 285.9, 0.0 ! !END!
5094 ! X = 402.97800, 6956.73800, 281.4, 0.0 ! !END!
5095 ! X = 403.07800, 6956.73800, 277.5, 0.0 ! !END!
5096 ! X = 403.17800, 6956.73800, 275.1, 0.0 ! !END!
5097 ! X = 403.27800, 6956.73800, 273.0, 0.0 ! !END!
5098 ! X = 403.37800, 6956.73800, 269.7, 0.0 ! !END!
5099 ! X = 403.47800, 6956.73800, 262.3, 0.0 ! !END!
5100 ! X = 403.57800, 6956.73800, 261.4, 0.0 ! !END!
5101 ! X = 403.67800, 6956.73800, 259.9, 0.0 ! !END!
5102 ! X = 403.77800, 6956.73800, 261.7, 0.0 ! !END!
5103 ! X = 403.87800, 6956.73800, 265.9, 0.0 ! !END!
5104 ! X = 403.97800, 6956.73800, 272.5, 0.0 ! !END!
5105 ! X = 404.07800, 6956.73800, 290.5, 0.0 ! !END!
5106 ! X = 404.17800, 6956.73800, 303.7, 0.0 ! !END!
5107 ! X = 404.27800, 6956.73800, 328.8, 0.0 ! !END!
5108 ! X = 404.37800, 6956.73800, 341.0, 0.0 ! !END!
5109 ! X = 404.47800, 6956.73800, 360.0, 0.0 ! !END!
5110 ! X = 404.57800, 6956.73800, 364.3, 0.0 ! !END!
5111 ! X = 404.67800, 6956.73800, 365.3, 0.0 ! !END!
5112 ! X = 404.77800, 6956.73800, 356.3, 0.0 ! !END!
5113 ! X = 404.77800, 6956.73800, 356.3, 0.0 ! !END!
5114 ! X = 404.87800, 6956.73800, 332.2, 0.0 ! !END!
5115 ! X = 404.87800, 6956.73800, 332.2, 0.0 ! !END!
5116 ! X = 404.97800, 6956.73800, 314.7, 0.0 ! !END!
5117 ! X = 404.97800, 6956.73800, 314.7, 0.0 ! !END!
5118 ! X = 405.07800, 6956.73800, 283.2, 0.0 ! !END!
5119 ! X = 405.07800, 6956.73800, 283.2, 0.0 ! !END!
5120 ! X = 405.17800, 6956.73800, 270.1, 0.0 ! !END!
5121 ! X = 405.17800, 6956.73800, 270.1, 0.0 ! !END!
5122 ! X = 405.27800, 6956.73800, 255.2, 0.0 ! !END!
5123 ! X = 405.27800, 6956.73800, 255.2, 0.0 ! !END!
5124 ! X = 405.37800, 6956.73800, 247.5, 0.0 ! !END!
5125 ! X = 405.37800, 6956.73800, 247.5, 0.0 ! !END!
5126 ! X = 405.47800, 6956.73800, 240.1, 0.0 ! !END!
5127 ! X = 405.47800, 6956.73800, 240.1, 0.0 ! !END!
5128 ! X = 405.57800, 6956.73800, 236.0, 0.0 ! !END!
5129 ! X = 405.67800, 6956.73800, 233.3, 0.0 ! !END!
5130 ! X = 405.77800, 6956.73800, 230.4, 0.0 ! !END!
5131 ! X = 405.87800, 6956.73800, 225.4, 0.0 ! !END!

5132 ! X = 405.97800, 6956.73800, 222.3, 0.0 ! !END!
5133 ! X = 406.07800, 6956.73800, 217.9, 0.0 ! !END!
5134 ! X = 402.77800, 6956.63800, 298.5, 0.0 ! !END!
5135 ! X = 402.87800, 6956.63800, 286.2, 0.0 ! !END!
5136 ! X = 402.97800, 6956.63800, 285.4, 0.0 ! !END!
5137 ! X = 403.07800, 6956.63800, 280.9, 0.0 ! !END!
5138 ! X = 403.17800, 6956.63800, 280.7, 0.0 ! !END!
5139 ! X = 403.27800, 6956.63800, 279.1, 0.0 ! !END!
5140 ! X = 403.37800, 6956.63800, 276.8, 0.0 ! !END!
5141 ! X = 403.47800, 6956.63800, 264.0, 0.0 ! !END!
5142 ! X = 403.57800, 6956.63800, 261.0, 0.0 ! !END!
5143 ! X = 403.67800, 6956.63800, 253.6, 0.0 ! !END!
5144 ! X = 403.77800, 6956.63800, 254.6, 0.0 ! !END!
5145 ! X = 403.87800, 6956.63800, 263.5, 0.0 ! !END!
5146 ! X = 403.97800, 6956.63800, 268.7, 0.0 ! !END!
5147 ! X = 404.07800, 6956.63800, 293.9, 0.0 ! !END!
5148 ! X = 404.17800, 6956.63800, 301.4, 0.0 ! !END!
5149 ! X = 404.87800, 6956.63800, 336.6, 0.0 ! !END!
5150 ! X = 404.87800, 6956.63800, 336.6, 0.0 ! !END!
5151 ! X = 404.97800, 6956.63800, 323.4, 0.0 ! !END!
5152 ! X = 404.97800, 6956.63800, 323.4, 0.0 ! !END!
5153 ! X = 405.07800, 6956.63800, 274.1, 0.0 ! !END!
5154 ! X = 405.07800, 6956.63800, 274.1, 0.0 ! !END!
5155 ! X = 405.17800, 6956.63800, 268.7, 0.0 ! !END!
5156 ! X = 405.17800, 6956.63800, 268.7, 0.0 ! !END!
5157 ! X = 405.27800, 6956.63800, 252.8, 0.0 ! !END!
5158 ! X = 405.27800, 6956.63800, 252.8, 0.0 ! !END!
5159 ! X = 405.37800, 6956.63800, 251.8, 0.0 ! !END!
5160 ! X = 405.37800, 6956.63800, 251.8, 0.0 ! !END!
5161 ! X = 405.47800, 6956.63800, 242.1, 0.0 ! !END!
5162 ! X = 405.57800, 6956.63800, 242.4, 0.0 ! !END!
5163 ! X = 405.67800, 6956.63800, 239.9, 0.0 ! !END!
5164 ! X = 405.77800, 6956.63800, 238.6, 0.0 ! !END!
5165 ! X = 405.87800, 6956.63800, 229.1, 0.0 ! !END!
5166 ! X = 405.97800, 6956.63800, 227.5, 0.0 ! !END!
5167 ! X = 406.07800, 6956.63800, 219.7, 0.0 ! !END!
5168 ! X = 406.17800, 6956.63800, 220.5, 0.0 ! !END!
5169 ! X = 399.37800, 6956.53800, 374.4, 0.0 ! !END!
5170 ! X = 399.47800, 6956.53800, 363.9, 0.0 ! !END!
5171 ! X = 399.57800, 6956.53800, 360.7, 0.0 ! !END!
5172 ! X = 399.67800, 6956.53800, 364.9, 0.0 ! !END!
5173 ! X = 402.67800, 6956.53800, 316.0, 0.0 ! !END!
5174 ! X = 402.77800, 6956.53800, 310.6, 0.0 ! !END!
5175 ! X = 402.87800, 6956.53800, 300.7, 0.0 ! !END!
5176 ! X = 402.97800, 6956.53800, 295.3, 0.0 ! !END!
5177 ! X = 403.07800, 6956.53800, 286.8, 0.0 ! !END!
5178 ! X = 403.17800, 6956.53800, 284.9, 0.0 ! !END!
5179 ! X = 403.27800, 6956.53800, 282.8, 0.0 ! !END!
5180 ! X = 403.37800, 6956.53800, 278.8, 0.0 ! !END!
5181 ! X = 403.47800, 6956.53800, 268.9, 0.0 ! !END!
5182 ! X = 403.57800, 6956.53800, 262.4, 0.0 ! !END!
5183 ! X = 403.67800, 6956.53800, 253.2, 0.0 ! !END!
5184 ! X = 403.77800, 6956.53800, 253.5, 0.0 ! !END!
5185 ! X = 403.87800, 6956.53800, 260.8, 0.0 ! !END!
5186 ! X = 403.97800, 6956.53800, 270.2, 0.0 ! !END!
5187 ! X = 404.97800, 6956.53800, 308.1, 0.0 ! !END!
5188 ! X = 405.07800, 6956.53800, 289.1, 0.0 ! !END!
5189 ! X = 405.07800, 6956.53800, 289.1, 0.0 ! !END!
5190 ! X = 405.17800, 6956.53800, 276.8, 0.0 ! !END!
5191 ! X = 405.17800, 6956.53800, 276.8, 0.0 ! !END!
5192 ! X = 405.27800, 6956.53800, 268.6, 0.0 ! !END!
5193 ! X = 405.37800, 6956.53800, 263.2, 0.0 ! !END!
5194 ! X = 405.47800, 6956.53800, 256.7, 0.0 ! !END!
5195 ! X = 405.57800, 6956.53800, 253.7, 0.0 ! !END!
5196 ! X = 405.67800, 6956.53800, 249.2, 0.0 ! !END!
5197 ! X = 405.77800, 6956.53800, 245.2, 0.0 ! !END!
5198 ! X = 405.87800, 6956.53800, 236.8, 0.0 ! !END!
5199 ! X = 405.97800, 6956.53800, 232.6, 0.0 ! !END!
5200 ! X = 406.07800, 6956.53800, 228.3, 0.0 ! !END!
5201 ! X = 406.17800, 6956.53800, 227.4, 0.0 ! !END!
5202 ! X = 406.27800, 6956.53800, 225.7, 0.0 ! !END!

5203 ! X =	406.37800,	6956.53800,	224.8,	0.0 !	!END!
5204 ! X =	399.07800,	6956.43800,	364.6,	0.0 !	!END!
5205 ! X =	399.17800,	6956.43800,	365.5,	0.0 !	!END!
5206 ! X =	399.27800,	6956.43800,	376.3,	0.0 !	!END!
5207 ! X =	399.37800,	6956.43800,	373.7,	0.0 !	!END!
5208 ! X =	399.47800,	6956.43800,	356.2,	0.0 !	!END!
5209 ! X =	399.57800,	6956.43800,	356.2,	0.0 !	!END!
5210 ! X =	399.67800,	6956.43800,	366.1,	0.0 !	!END!
5211 ! X =	399.77800,	6956.43800,	370.0,	0.0 !	!END!
5212 ! X =	399.87800,	6956.43800,	390.4,	0.0 !	!END!
5213 ! X =	399.97800,	6956.43800,	394.2,	0.0 !	!END!
5214 ! X =	402.67800,	6956.43800,	325.5,	0.0 !	!END!
5215 ! X =	402.77800,	6956.43800,	322.5,	0.0 !	!END!
5216 ! X =	402.87800,	6956.43800,	306.6,	0.0 !	!END!
5217 ! X =	402.97800,	6956.43800,	302.2,	0.0 !	!END!
5218 ! X =	403.07800,	6956.43800,	286.8,	0.0 !	!END!
5219 ! X =	403.17800,	6956.43800,	284.9,	0.0 !	!END!
5220 ! X =	403.27800,	6956.43800,	285.0,	0.0 !	!END!
5221 ! X =	403.37800,	6956.43800,	281.8,	0.0 !	!END!
5222 ! X =	403.47800,	6956.43800,	268.3,	0.0 !	!END!
5223 ! X =	403.57800,	6956.43800,	263.9,	0.0 !	!END!
5224 ! X =	403.67800,	6956.43800,	248.3,	0.0 !	!END!
5225 ! X =	403.77800,	6956.43800,	248.3,	0.0 !	!END!
5226 ! X =	405.07800,	6956.43800,	287.6,	0.0 !	!END!
5227 ! X =	405.17800,	6956.43800,	285.4,	0.0 !	!END!
5228 ! X =	405.27800,	6956.43800,	275.4,	0.0 !	!END!
5229 ! X =	405.37800,	6956.43800,	273.8,	0.0 !	!END!
5230 ! X =	405.47800,	6956.43800,	263.8,	0.0 !	!END!
5231 ! X =	405.57800,	6956.43800,	262.3,	0.0 !	!END!
5232 ! X =	405.67800,	6956.43800,	254.6,	0.0 !	!END!
5233 ! X =	405.77800,	6956.43800,	252.5,	0.0 !	!END!
5234 ! X =	405.87800,	6956.43800,	238.5,	0.0 !	!END!
5235 ! X =	405.97800,	6956.43800,	237.5,	0.0 !	!END!
5236 ! X =	406.07800,	6956.43800,	232.2,	0.0 !	!END!
5237 ! X =	406.17800,	6956.43800,	231.0,	0.0 !	!END!
5238 ! X =	406.27800,	6956.43800,	226.2,	0.0 !	!END!
5239 ! X =	406.37800,	6956.43800,	223.7,	0.0 !	!END!
5240 ! X =	406.47800,	6956.43800,	213.2,	0.0 !	!END!
5241 ! X =	398.87800,	6956.33800,	396.5,	0.0 !	!END!
5242 ! X =	398.97800,	6956.33800,	386.0,	0.0 !	!END!
5243 ! X =	399.07800,	6956.33800,	370.3,	0.0 !	!END!
5244 ! X =	399.17800,	6956.33800,	368.3,	0.0 !	!END!
5245 ! X =	399.27800,	6956.33800,	367.9,	0.0 !	!END!
5246 ! X =	399.37800,	6956.33800,	365.4,	0.0 !	!END!
5247 ! X =	399.47800,	6956.33800,	357.6,	0.0 !	!END!
5248 ! X =	399.57800,	6956.33800,	356.4,	0.0 !	!END!
5249 ! X =	399.67800,	6956.33800,	361.5,	0.0 !	!END!
5250 ! X =	399.77800,	6956.33800,	369.2,	0.0 !	!END!
5251 ! X =	399.87800,	6956.33800,	383.2,	0.0 !	!END!
5252 ! X =	399.97800,	6956.33800,	391.3,	0.0 !	!END!
5253 ! X =	400.07800,	6956.33800,	400.6,	0.0 !	!END!
5254 ! X =	400.17800,	6956.33800,	409.6,	0.0 !	!END!
5255 ! X =	401.07800,	6956.33800,	399.6,	0.0 !	!END!
5256 ! X =	401.17800,	6956.33800,	401.4,	0.0 !	!END!
5257 ! X =	401.27800,	6956.33800,	406.5,	0.0 !	!END!
5258 ! X =	401.37800,	6956.33800,	411.1,	0.0 !	!END!
5259 ! X =	401.47800,	6956.33800,	418.7,	0.0 !	!END!
5260 ! X =	401.57800,	6956.33800,	423.5,	0.0 !	!END!
5261 ! X =	401.57800,	6956.33800,	423.5,	0.0 !	!END!
5262 ! X =	401.67800,	6956.33800,	430.4,	0.0 !	!END!
5263 ! X =	401.67800,	6956.33800,	430.4,	0.0 !	!END!
5264 ! X =	401.77800,	6956.33800,	433.6,	0.0 !	!END!
5265 ! X =	401.77800,	6956.33800,	433.6,	0.0 !	!END!
5266 ! X =	401.87800,	6956.33800,	436.0,	0.0 !	!END!
5267 ! X =	401.87800,	6956.33800,	436.0,	0.0 !	!END!
5268 ! X =	401.97800,	6956.33800,	426.1,	0.0 !	!END!
5269 ! X =	401.97800,	6956.33800,	426.1,	0.0 !	!END!
5270 ! X =	402.57800,	6956.33800,	340.7,	0.0 !	!END!
5271 ! X =	402.67800,	6956.33800,	334.7,	0.0 !	!END!
5272 ! X =	402.77800,	6956.33800,	328.4,	0.0 !	!END!
5273 ! X =	402.87800,	6956.33800,	314.6,	0.0 !	!END!

5274 ! X = 402.97800, 6956.33800, 305.6, 0.0 ! !END!
5275 ! X = 403.07800, 6956.33800, 291.7, 0.0 ! !END!
5276 ! X = 403.17800, 6956.33800, 286.3, 0.0 ! !END!
5277 ! X = 403.27800, 6956.33800, 278.7, 0.0 ! !END!
5278 ! X = 403.37800, 6956.33800, 274.8, 0.0 ! !END!
5279 ! X = 403.47800, 6956.33800, 267.7, 0.0 ! !END!
5280 ! X = 403.57800, 6956.33800, 260.9, 0.0 ! !END!
5281 ! X = 403.67800, 6956.33800, 251.3, 0.0 ! !END!
5282 ! X = 405.17800, 6956.33800, 288.8, 0.0 ! !END!
5283 ! X = 405.27800, 6956.33800, 286.9, 0.0 ! !END!
5284 ! X = 405.37800, 6956.33800, 282.8, 0.0 ! !END!
5285 ! X = 405.47800, 6956.33800, 276.7, 0.0 ! !END!
5286 ! X = 405.57800, 6956.33800, 271.8, 0.0 ! !END!
5287 ! X = 405.67800, 6956.33800, 263.9, 0.0 ! !END!
5288 ! X = 405.77800, 6956.33800, 258.8, 0.0 ! !END!
5289 ! X = 405.87800, 6956.33800, 252.4, 0.0 ! !END!
5290 ! X = 405.97800, 6956.33800, 247.6, 0.0 ! !END!
5291 ! X = 406.07800, 6956.33800, 240.0, 0.0 ! !END!
5292 ! X = 406.17800, 6956.33800, 235.8, 0.0 ! !END!
5293 ! X = 406.27800, 6956.33800, 227.3, 0.0 ! !END!
5294 ! X = 406.37800, 6956.33800, 222.2, 0.0 ! !END!
5295 ! X = 406.47800, 6956.33800, 213.6, 0.0 ! !END!
5296 ! X = 406.57800, 6956.33800, 210.0, 0.0 ! !END!
5297 ! X = 406.67800, 6956.33800, 207.6, 0.0 ! !END!
5298 ! X = 398.67800, 6956.23800, 430.4, 0.0 ! !END!
5299 ! X = 398.77800, 6956.23800, 424.6, 0.0 ! !END!
5300 ! X = 398.87800, 6956.23800, 400.4, 0.0 ! !END!
5301 ! X = 398.97800, 6956.23800, 393.6, 0.0 ! !END!
5302 ! X = 399.07800, 6956.23800, 368.0, 0.0 ! !END!
5303 ! X = 399.17800, 6956.23800, 365.3, 0.0 ! !END!
5304 ! X = 399.27800, 6956.23800, 365.2, 0.0 ! !END!
5305 ! X = 399.37800, 6956.23800, 363.3, 0.0 ! !END!
5306 ! X = 399.47800, 6956.23800, 353.5, 0.0 ! !END!
5307 ! X = 399.57800, 6956.23800, 352.7, 0.0 ! !END!
5308 ! X = 399.67800, 6956.23800, 358.6, 0.0 ! !END!
5309 ! X = 399.77800, 6956.23800, 361.7, 0.0 ! !END!
5310 ! X = 399.87800, 6956.23800, 384.7, 0.0 ! !END!
5311 ! X = 399.97800, 6956.23800, 387.0, 0.0 ! !END!
5312 ! X = 400.07800, 6956.23800, 396.8, 0.0 ! !END!
5313 ! X = 400.17800, 6956.23800, 400.4, 0.0 ! !END!
5314 ! X = 400.27800, 6956.23800, 420.0, 0.0 ! !END!
5315 ! X = 400.37800, 6956.23800, 425.0, 0.0 ! !END!
5316 ! X = 400.87800, 6956.23800, 395.0, 0.0 ! !END!
5317 ! X = 400.97800, 6956.23800, 389.7, 0.0 ! !END!
5318 ! X = 401.07800, 6956.23800, 385.8, 0.0 ! !END!
5319 ! X = 401.17800, 6956.23800, 384.4, 0.0 ! !END!
5320 ! X = 401.27800, 6956.23800, 392.6, 0.0 ! !END!
5321 ! X = 401.37800, 6956.23800, 393.9, 0.0 ! !END!
5322 ! X = 401.47800, 6956.23800, 410.8, 0.0 ! !END!
5323 ! X = 401.47800, 6956.23800, 410.8, 0.0 ! !END!
5324 ! X = 401.57800, 6956.23800, 409.9, 0.0 ! !END!
5325 ! X = 401.57800, 6956.23800, 409.9, 0.0 ! !END!
5326 ! X = 401.67800, 6956.23800, 419.1, 0.0 ! !END!
5327 ! X = 401.67800, 6956.23800, 419.1, 0.0 ! !END!
5328 ! X = 401.77800, 6956.23800, 417.8, 0.0 ! !END!
5329 ! X = 401.77800, 6956.23800, 417.8, 0.0 ! !END!
5330 ! X = 401.87800, 6956.23800, 429.6, 0.0 ! !END!
5331 ! X = 401.87800, 6956.23800, 429.6, 0.0 ! !END!
5332 ! X = 401.97800, 6956.23800, 425.4, 0.0 ! !END!
5333 ! X = 401.97800, 6956.23800, 425.4, 0.0 ! !END!
5334 ! X = 402.07800, 6956.23800, 412.0, 0.0 ! !END!
5335 ! X = 402.07800, 6956.23800, 412.0, 0.0 ! !END!
5336 ! X = 402.17800, 6956.23800, 402.3, 0.0 ! !END!
5337 ! X = 402.27800, 6956.23800, 363.9, 0.0 ! !END!
5338 ! X = 402.37800, 6956.23800, 358.5, 0.0 ! !END!
5339 ! X = 402.47800, 6956.23800, 349.2, 0.0 ! !END!
5340 ! X = 402.57800, 6956.23800, 346.9, 0.0 ! !END!
5341 ! X = 402.67800, 6956.23800, 339.3, 0.0 ! !END!
5342 ! X = 402.77800, 6956.23800, 335.2, 0.0 ! !END!
5343 ! X = 402.87800, 6956.23800, 314.7, 0.0 ! !END!
5344 ! X = 402.97800, 6956.23800, 310.2, 0.0 ! !END!

5345 ! X = 403.07800, 6956.23800, 290.3, 0.0 ! !END!
5346 ! X = 403.17800, 6956.23800, 286.8, 0.0 ! !END!
5347 ! X = 403.27800, 6956.23800, 273.1, 0.0 ! !END!
5348 ! X = 403.37800, 6956.23800, 271.1, 0.0 ! !END!
5349 ! X = 403.47800, 6956.23800, 264.4, 0.0 ! !END!
5350 ! X = 403.57800, 6956.23800, 262.0, 0.0 ! !END!
5351 ! X = 405.27800, 6956.23800, 291.7, 0.0 ! !END!
5352 ! X = 405.37800, 6956.23800, 288.9, 0.0 ! !END!
5353 ! X = 405.47800, 6956.23800, 281.4, 0.0 ! !END!
5354 ! X = 405.57800, 6956.23800, 277.7, 0.0 ! !END!
5355 ! X = 405.67800, 6956.23800, 265.9, 0.0 ! !END!
5356 ! X = 405.77800, 6956.23800, 264.3, 0.0 ! !END!
5357 ! X = 405.87800, 6956.23800, 258.9, 0.0 ! !END!
5358 ! X = 405.97800, 6956.23800, 256.1, 0.0 ! !END!
5359 ! X = 406.07800, 6956.23800, 242.7, 0.0 ! !END!
5360 ! X = 406.17800, 6956.23800, 239.1, 0.0 ! !END!
5361 ! X = 406.27800, 6956.23800, 225.8, 0.0 ! !END!
5362 ! X = 406.37800, 6956.23800, 222.9, 0.0 ! !END!
5363 ! X = 406.47800, 6956.23800, 210.3, 0.0 ! !END!
5364 ! X = 406.57800, 6956.23800, 210.1, 0.0 ! !END!
5365 ! X = 406.67800, 6956.23800, 210.0, 0.0 ! !END!
5366 ! X = 406.77800, 6956.23800, 209.3, 0.0 ! !END!
5367 ! X = 406.87800, 6956.23800, 201.0, 0.0 ! !END!
5368 ! X = 398.47800, 6956.13800, 443.5, 0.0 ! !END!
5369 ! X = 398.57800, 6956.13800, 438.5, 0.0 ! !END!
5370 ! X = 398.67800, 6956.13800, 431.0, 0.0 ! !END!
5371 ! X = 398.77800, 6956.13800, 422.4, 0.0 ! !END!
5372 ! X = 398.87800, 6956.13800, 406.4, 0.0 ! !END!
5373 ! X = 398.97800, 6956.13800, 394.3, 0.0 ! !END!
5374 ! X = 399.07800, 6956.13800, 377.4, 0.0 ! !END!
5375 ! X = 399.17800, 6956.13800, 369.6, 0.0 ! !END!
5376 ! X = 399.27800, 6956.13800, 360.0, 0.0 ! !END!
5377 ! X = 399.37800, 6956.13800, 357.4, 0.0 ! !END!
5378 ! X = 399.47800, 6956.13800, 354.6, 0.0 ! !END!
5379 ! X = 399.57800, 6956.13800, 352.5, 0.0 ! !END!
5380 ! X = 399.67800, 6956.13800, 348.8, 0.0 ! !END!
5381 ! X = 399.77800, 6956.13800, 354.8, 0.0 ! !END!
5382 ! X = 399.87800, 6956.13800, 368.8, 0.0 ! !END!
5383 ! X = 399.97800, 6956.13800, 377.1, 0.0 ! !END!
5384 ! X = 400.07800, 6956.13800, 388.4, 0.0 ! !END!
5385 ! X = 400.17800, 6956.13800, 396.3, 0.0 ! !END!
5386 ! X = 400.27800, 6956.13800, 410.3, 0.0 ! !END!
5387 ! X = 400.37800, 6956.13800, 420.2, 0.0 ! !END!
5388 ! X = 400.47800, 6956.13800, 431.9, 0.0 ! !END!
5389 ! X = 400.57800, 6956.13800, 434.9, 0.0 ! !END!
5390 ! X = 400.67800, 6956.13800, 430.3, 0.0 ! !END!
5391 ! X = 400.77800, 6956.13800, 417.8, 0.0 ! !END!
5392 ! X = 400.87800, 6956.13800, 390.7, 0.0 ! !END!
5393 ! X = 400.97800, 6956.13800, 379.6, 0.0 ! !END!
5394 ! X = 401.07800, 6956.13800, 368.0, 0.0 ! !END!
5395 ! X = 401.17800, 6956.13800, 367.4, 0.0 ! !END!
5396 ! X = 401.27800, 6956.13800, 368.6, 0.0 ! !END!
5397 ! X = 401.37800, 6956.13800, 374.3, 0.0 ! !END!
5398 ! X = 401.37800, 6956.13800, 374.3, 0.0 ! !END!
5399 ! X = 401.47800, 6956.13800, 382.5, 0.0 ! !END!
5400 ! X = 401.47800, 6956.13800, 382.5, 0.0 ! !END!
5401 ! X = 401.57800, 6956.13800, 386.2, 0.0 ! !END!
5402 ! X = 401.57800, 6956.13800, 386.2, 0.0 ! !END!
5403 ! X = 401.67800, 6956.13800, 384.6, 0.0 ! !END!
5404 ! X = 401.67800, 6956.13800, 384.6, 0.0 ! !END!
5405 ! X = 401.77800, 6956.13800, 388.2, 0.0 ! !END!
5406 ! X = 401.77800, 6956.13800, 388.2, 0.0 ! !END!
5407 ! X = 401.87800, 6956.13800, 393.8, 0.0 ! !END!
5408 ! X = 401.87800, 6956.13800, 393.8, 0.0 ! !END!
5409 ! X = 401.97800, 6956.13800, 395.9, 0.0 ! !END!
5410 ! X = 401.97800, 6956.13800, 395.9, 0.0 ! !END!
5411 ! X = 402.07800, 6956.13800, 397.3, 0.0 ! !END!
5412 ! X = 402.07800, 6956.13800, 397.3, 0.0 ! !END!
5413 ! X = 402.17800, 6956.13800, 387.8, 0.0 ! !END!
5414 ! X = 402.17800, 6956.13800, 387.8, 0.0 ! !END!
5415 ! X = 402.27800, 6956.13800, 372.1, 0.0 ! !END!

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5416 ! X =   402.37800,  6956.13800,  361.6,   0.0 !  !END!
5417 ! X =   402.47800,  6956.13800,  352.0,   0.0 !  !END!
5418 ! X =   402.57800,  6956.13800,  347.7,   0.0 !  !END!
5419 ! X =   402.67800,  6956.13800,  342.0,   0.0 !  !END!
5420 ! X =   402.77800,  6956.13800,  335.4,   0.0 !  !END!
5421 ! X =   402.87800,  6956.13800,  323.8,   0.0 !  !END!
5422 ! X =   402.97800,  6956.13800,  314.5,   0.0 !  !END!
5423 ! X =   403.07800,  6956.13800,  301.0,   0.0 !  !END!
5424 ! X =   403.17800,  6956.13800,  292.3,   0.0 !  !END!
5425 ! X =   403.27800,  6956.13800,  279.4,   0.0 !  !END!
5426 ! X =   403.37800,  6956.13800,  273.0,   0.0 !  !END!
5427 ! X =   403.47800,  6956.13800,  263.4,   0.0 !  !END!
5428 ! X =   403.57800,  6956.13800,  259.6,   0.0 !  !END!
5429 ! X =   405.27800,  6956.13800,  293.7,   0.0 !  !END!
5430 ! X =   405.37800,  6956.13800,  288.0,   0.0 !  !END!
5431 ! X =   405.47800,  6956.13800,  275.3,   0.0 !  !END!
5432 ! X =   405.57800,  6956.13800,  271.0,   0.0 !  !END!
5433 ! X =   405.67800,  6956.13800,  269.5,   0.0 !  !END!
5434 ! X =   405.77800,  6956.13800,  267.1,   0.0 !  !END!
5435 ! X =   405.87800,  6956.13800,  264.5,   0.0 !  !END!
5436 ! X =   405.97800,  6956.13800,  259.4,   0.0 !  !END!
5437 ! X =   406.07800,  6956.13800,  248.3,   0.0 !  !END!
5438 ! X =   406.17800,  6956.13800,  240.9,   0.0 !  !END!
5439 ! X =   406.27800,  6956.13800,  229.8,   0.0 !  !END!
5440 ! X =   406.37800,  6956.13800,  223.9,   0.0 !  !END!
5441 ! X =   406.47800,  6956.13800,  218.0,   0.0 !  !END!
5442 ! X =   406.57800,  6956.13800,  215.5,   0.0 !  !END!
5443 ! X =   406.67800,  6956.13800,  214.2,   0.0 !  !END!
5444 ! X =   406.77800,  6956.13800,  212.8,   0.0 !  !END!
5445 ! X =   406.87800,  6956.13800,  211.0,   0.0 !  !END!
5446 ! X =   406.97800,  6956.13800,  209.5,   0.0 !  !END!
5447 ! X =   398.37800,  6956.03800,  447.3,   0.0 !  !END!
5448 ! X =   398.47800,  6956.03800,  438.0,   0.0 !  !END!
5449 ! X =   398.57800,  6956.03800,  435.1,   0.0 !  !END!
5450 ! X =   398.67800,  6956.03800,  428.6,   0.0 !  !END!
5451 ! X =   398.77800,  6956.03800,  424.0,   0.0 !  !END!
5452 ! X =   398.87800,  6956.03800,  403.1,   0.0 !  !END!
5453 ! X =   398.97800,  6956.03800,  397.9,   0.0 !  !END!
5454 ! X =   399.07800,  6956.03800,  377.1,   0.0 !  !END!
5455 ! X =   399.17800,  6956.03800,  371.7,   0.0 !  !END!
5456 ! X =   399.27800,  6956.03800,  353.3,   0.0 !  !END!
5457 ! X =   399.37800,  6956.03800,  351.7,   0.0 !  !END!
5458 ! X =   399.47800,  6956.03800,  354.8,   0.0 !  !END!
5459 ! X =   399.57800,  6956.03800,  351.3,   0.0 !  !END!
5460 ! X =   399.67800,  6956.03800,  339.4,   0.0 !  !END!
5461 ! X =   399.77800,  6956.03800,  342.2,   0.0 !  !END!
5462 ! X =   399.87800,  6956.03800,  365.4,   0.0 !  !END!
5463 ! X =   399.97800,  6956.03800,  369.8,   0.0 !  !END!
5464 ! X =   400.07800,  6956.03800,  385.9,   0.0 !  !END!
5465 ! X =   400.17800,  6956.03800,  389.3,   0.0 !  !END!
5466 ! X =   400.27800,  6956.03800,  409.4,   0.0 !  !END!
5467 ! X =   400.37800,  6956.03800,  411.2,   0.0 !  !END!
5468 ! X =   400.47800,  6956.03800,  427.0,   0.0 !  !END!
5469 ! X =   400.57800,  6956.03800,  425.9,   0.0 !  !END!
5470 ! X =   400.67800,  6956.03800,  426.2,   0.0 !  !END!
5471 ! X =   400.77800,  6956.03800,  417.4,   0.0 !  !END!
5472 ! X =   400.87800,  6956.03800,  376.8,   0.0 !  !END!
5473 ! X =   400.97800,  6956.03800,  369.3,   0.0 !  !END!
5474 ! X =   401.07800,  6956.03800,  353.3,   0.0 !  !END!
5475 ! X =   401.17800,  6956.03800,  350.7,   0.0 !  !END!
5476 ! X =   401.27800,  6956.03800,  353.9,   0.0 !  !END!
5477 ! X =   401.27800,  6956.03800,  353.9,   0.0 !  !END!
5478 ! X =   401.37800,  6956.03800,  354.3,   0.0 !  !END!
5479 ! X =   401.37800,  6956.03800,  354.3,   0.0 !  !END!
5480 ! X =   401.47800,  6956.03800,  369.9,   0.0 !  !END!
5481 ! X =   401.47800,  6956.03800,  369.9,   0.0 !  !END!
5482 ! X =   401.57800,  6956.03800,  367.6,   0.0 !  !END!
5483 ! X =   401.57800,  6956.03800,  367.6,   0.0 !  !END!
5484 ! X =   401.67800,  6956.03800,  362.0,   0.0 !  !END!
5485 ! X =   401.67800,  6956.03800,  362.0,   0.0 !  !END!
5486 ! X =   401.77800,  6956.03800,  362.1,   0.0 !  !END!
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5487 ! X =   401.77800,  6956.03800,  362.1,   0.0 !  !END!
5488 ! X =   401.87800,  6956.03800,  373.4,   0.0 !  !END!
5489 ! X =   401.87800,  6956.03800,  373.4,   0.0 !  !END!
5490 ! X =   401.97800,  6956.03800,  375.1,   0.0 !  !END!
5491 ! X =   401.97800,  6956.03800,  375.1,   0.0 !  !END!
5492 ! X =   402.07800,  6956.03800,  386.6,   0.0 !  !END!
5493 ! X =   402.07800,  6956.03800,  386.6,   0.0 !  !END!
5494 ! X =   402.17800,  6956.03800,  383.2,   0.0 !  !END!
5495 ! X =   402.17800,  6956.03800,  383.2,   0.0 !  !END!
5496 ! X =   402.27800,  6956.03800,  366.9,   0.0 !  !END!
5497 ! X =   402.37800,  6956.03800,  361.2,   0.0 !  !END!
5498 ! X =   402.47800,  6956.03800,  348.5,   0.0 !  !END!
5499 ! X =   402.57800,  6956.03800,  344.9,   0.0 !  !END!
5500 ! X =   402.67800,  6956.03800,  341.0,   0.0 !  !END!
5501 ! X =   402.77800,  6956.03800,  337.0,   0.0 !  !END!
5502 ! X =   402.87800,  6956.03800,  324.0,   0.0 !  !END!
5503 ! X =   402.97800,  6956.03800,  318.9,   0.0 !  !END!
5504 ! X =   403.07800,  6956.03800,  302.1,   0.0 !  !END!
5505 ! X =   403.17800,  6956.03800,  296.9,   0.0 !  !END!
5506 ! X =   403.27800,  6956.03800,  279.5,   0.0 !  !END!
5507 ! X =   403.37800,  6956.03800,  275.6,   0.0 !  !END!
5508 ! X =   403.47800,  6956.03800,  259.4,   0.0 !  !END!
5509 ! X =   405.37800,  6956.03800,  286.1,   0.0 !  !END!
5510 ! X =   405.47800,  6956.03800,  263.9,   0.0 !  !END!
5511 ! X =   405.57800,  6956.03800,  262.4,   0.0 !  !END!
5512 ! X =   405.67800,  6956.03800,  269.7,   0.0 !  !END!
5513 ! X =   405.77800,  6956.03800,  268.5,   0.0 !  !END!
5514 ! X =   405.87800,  6956.03800,  266.6,   0.0 !  !END!
5515 ! X =   405.97800,  6956.03800,  263.3,   0.0 !  !END!
5516 ! X =   406.07800,  6956.03800,  248.0,   0.0 !  !END!
5517 ! X =   406.17800,  6956.03800,  244.7,   0.0 !  !END!
5518 ! X =   406.27800,  6956.03800,  228.2,   0.0 !  !END!
5519 ! X =   406.37800,  6956.03800,  226.8,   0.0 !  !END!
5520 ! X =   406.47800,  6956.03800,  220.4,   0.0 !  !END!
5521 ! X =   406.57800,  6956.03800,  220.2,   0.0 !  !END!
5522 ! X =   406.67800,  6956.03800,  216.6,   0.0 !  !END!
5523 ! X =   406.77800,  6956.03800,  217.1,   0.0 !  !END!
5524 ! X =   406.87800,  6956.03800,  216.6,   0.0 !  !END!
5525 ! X =   406.97800,  6956.03800,  215.4,   0.0 !  !END!
5526 ! X =   407.07800,  6956.03800,  209.2,   0.0 !  !END!
5527 ! X =   407.17800,  6956.03800,  206.6,   0.0 !  !END!
5528 ! X =   408.67800,  6956.03800,  163.1,   0.0 !  !END!
5529 ! X =   408.77800,  6956.03800,  163.1,   0.0 !  !END!
5530 ! X =   408.87800,  6956.03800,  161.4,   0.0 !  !END!
5531 ! X =   408.97800,  6956.03800,  161.4,   0.0 !  !END!
5532 ! X =   397.87800,  6955.93800,  448.1,   0.0 !  !END!
5533 ! X =   397.97800,  6955.93800,  446.6,   0.0 !  !END!
5534 ! X =   398.07800,  6955.93800,  443.9,   0.0 !  !END!
5535 ! X =   398.17800,  6955.93800,  442.0,   0.0 !  !END!
5536 ! X =   398.27800,  6955.93800,  439.9,   0.0 !  !END!
5537 ! X =   398.37800,  6955.93800,  436.8,   0.0 !  !END!
5538 ! X =   398.47800,  6955.93800,  431.1,   0.0 !  !END!
5539 ! X =   398.57800,  6955.93800,  427.3,   0.0 !  !END!
5540 ! X =   398.67800,  6955.93800,  421.1,   0.0 !  !END!
5541 ! X =   398.77800,  6955.93800,  415.5,   0.0 !  !END!
5542 ! X =   398.87800,  6955.93800,  406.6,   0.0 !  !END!
5543 ! X =   398.97800,  6955.93800,  397.4,   0.0 !  !END!
5544 ! X =   399.07800,  6955.93800,  382.9,   0.0 !  !END!
5545 ! X =   399.17800,  6955.93800,  372.5,   0.0 !  !END!
5546 ! X =   399.27800,  6955.93800,  356.6,   0.0 !  !END!
5547 ! X =   399.37800,  6955.93800,  351.1,   0.0 !  !END!
5548 ! X =   399.47800,  6955.93800,  343.6,   0.0 !  !END!
5549 ! X =   399.57800,  6955.93800,  340.3,   0.0 !  !END!
5550 ! X =   399.67800,  6955.93800,  336.5,   0.0 !  !END!
5551 ! X =   399.77800,  6955.93800,  340.8,   0.0 !  !END!
5552 ! X =   399.87800,  6955.93800,  356.1,   0.0 !  !END!
5553 ! X =   399.97800,  6955.93800,  365.4,   0.0 !  !END!
5554 ! X =   400.07800,  6955.93800,  375.5,   0.0 !  !END!
5555 ! X =   400.17800,  6955.93800,  382.8,   0.0 !  !END!
5556 ! X =   400.27800,  6955.93800,  390.3,   0.0 !  !END!
5557 ! X =   400.37800,  6955.93800,  396.6,   0.0 !  !END!
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5558 ! X =   400.47800,   6955.93800,   401.5,   0.0 !  !END!
5559 ! X =   400.57800,   6955.93800,   404.5,   0.0 !  !END!
5560 ! X =   400.67800,   6955.93800,   404.3,   0.0 !  !END!
5561 ! X =   400.77800,   6955.93800,   395.8,   0.0 !  !END!
5562 ! X =   400.87800,   6955.93800,   377.7,   0.0 !  !END!
5563 ! X =   400.97800,   6955.93800,   363.6,   0.0 !  !END!
5564 ! X =   401.07800,   6955.93800,   344.1,   0.0 !  !END!
5565 ! X =   401.17800,   6955.93800,   338.9,   0.0 !  !END!
5566 ! X =   401.27800,   6955.93800,   333.9,   0.0 !  !END!
5567 ! X =   401.27800,   6955.93800,   333.9,   0.0 !  !END!
5568 ! X =   401.37800,   6955.93800,   336.6,   0.0 !  !END!
5569 ! X =   401.37800,   6955.93800,   336.6,   0.0 !  !END!
5570 ! X =   401.47800,   6955.93800,   339.6,   0.0 !  !END!
5571 ! X =   401.47800,   6955.93800,   339.6,   0.0 !  !END!
5572 ! X =   401.57800,   6955.93800,   341.4,   0.0 !  !END!
5573 ! X =   401.57800,   6955.93800,   341.4,   0.0 !  !END!
5574 ! X =   401.67800,   6955.93800,   342.3,   0.0 !  !END!
5575 ! X =   401.67800,   6955.93800,   342.3,   0.0 !  !END!
5576 ! X =   401.77800,   6955.93800,   344.7,   0.0 !  !END!
5577 ! X =   401.77800,   6955.93800,   344.7,   0.0 !  !END!
5578 ! X =   401.87800,   6955.93800,   351.6,   0.0 !  !END!
5579 ! X =   401.87800,   6955.93800,   351.6,   0.0 !  !END!
5580 ! X =   401.97800,   6955.93800,   356.9,   0.0 !  !END!
5581 ! X =   401.97800,   6955.93800,   356.9,   0.0 !  !END!
5582 ! X =   402.07800,   6955.93800,   362.1,   0.0 !  !END!
5583 ! X =   402.07800,   6955.93800,   362.1,   0.0 !  !END!
5584 ! X =   402.17800,   6955.93800,   362.0,   0.0 !  !END!
5585 ! X =   402.17800,   6955.93800,   362.0,   0.0 !  !END!
5586 ! X =   402.27800,   6955.93800,   357.3,   0.0 !  !END!
5587 ! X =   402.37800,   6955.93800,   350.3,   0.0 !  !END!
5588 ! X =   402.47800,   6955.93800,   338.3,   0.0 !  !END!
5589 ! X =   402.57800,   6955.93800,   333.7,   0.0 !  !END!
5590 ! X =   402.67800,   6955.93800,   329.3,   0.0 !  !END!
5591 ! X =   402.77800,   6955.93800,   325.7,   0.0 !  !END!
5592 ! X =   402.87800,   6955.93800,   319.1,   0.0 !  !END!
5593 ! X =   402.97800,   6955.93800,   312.3,   0.0 !  !END!
5594 ! X =   403.07800,   6955.93800,   301.1,   0.0 !  !END!
5595 ! X =   403.17800,   6955.93800,   293.0,   0.0 !  !END!
5596 ! X =   403.27800,   6955.93800,   282.6,   0.0 !  !END!
5597 ! X =   403.37800,   6955.93800,   276.2,   0.0 !  !END!
5598 ! X =   405.57800,   6955.93800,   254.9,   0.0 !  !END!
5599 ! X =   405.67800,   6955.93800,   257.6,   0.0 !  !END!
5600 ! X =   405.77800,   6955.93800,   258.7,   0.0 !  !END!
5601 ! X =   405.87800,   6955.93800,   257.9,   0.0 !  !END!
5602 ! X =   405.97800,   6955.93800,   255.6,   0.0 !  !END!
5603 ! X =   406.07800,   6955.93800,   254.2,   0.0 !  !END!
5604 ! X =   406.17800,   6955.93800,   248.3,   0.0 !  !END!
5605 ! X =   406.27800,   6955.93800,   240.2,   0.0 !  !END!
5606 ! X =   406.37800,   6955.93800,   234.9,   0.0 !  !END!
5607 ! X =   406.47800,   6955.93800,   229.3,   0.0 !  !END!
5608 ! X =   406.57800,   6955.93800,   227.1,   0.0 !  !END!
5609 ! X =   406.67800,   6955.93800,   225.3,   0.0 !  !END!
5610 ! X =   406.77800,   6955.93800,   224.1,   0.0 !  !END!
5611 ! X =   406.87800,   6955.93800,   221.0,   0.0 !  !END!
5612 ! X =   406.97800,   6955.93800,   218.2,   0.0 !  !END!
5613 ! X =   407.07800,   6955.93800,   210.7,   0.0 !  !END!
5614 ! X =   407.17800,   6955.93800,   205.8,   0.0 !  !END!
5615 ! X =   407.27800,   6955.93800,   198.0,   0.0 !  !END!
5616 ! X =   407.37800,   6955.93800,   193.7,   0.0 !  !END!
5617 ! X =   407.97800,   6955.93800,   179.2,   0.0 !  !END!
5618 ! X =   408.07800,   6955.93800,   181.7,   0.0 !  !END!
5619 ! X =   408.17800,   6955.93800,   180.3,   0.0 !  !END!
5620 ! X =   408.27800,   6955.93800,   175.1,   0.0 !  !END!
5621 ! X =   408.37800,   6955.93800,   172.6,   0.0 !  !END!
5622 ! X =   408.37800,   6955.93800,   172.6,   0.0 !  !END!
5623 ! X =   408.47800,   6955.93800,   168.4,   0.0 !  !END!
5624 ! X =   408.47800,   6955.93800,   168.4,   0.0 !  !END!
5625 ! X =   408.57800,   6955.93800,   167.0,   0.0 !  !END!
5626 ! X =   408.57800,   6955.93800,   167.0,   0.0 !  !END!
5627 ! X =   408.67800,   6955.93800,   165.8,   0.0 !  !END!
5628 ! X =   408.67800,   6955.93800,   165.8,   0.0 !  !END!
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5629 ! X =   408.77800,  6955.93800,  165.2,    0.0 !  !END!
5630 ! X =   408.77800,  6955.93800,  165.2,    0.0 !  !END!
5631 ! X =   408.87800,  6955.93800,  164.8,    0.0 !  !END!
5632 ! X =   408.97800,  6955.93800,  163.9,    0.0 !  !END!
5633 ! X =   409.07800,  6955.93800,  162.0,    0.0 !  !END!
5634 ! X =   409.17800,  6955.93800,  160.9,    0.0 !  !END!
5635 ! X =   409.27800,  6955.93800,  159.2,    0.0 !  !END!
5636 ! X =   409.37800,  6955.93800,  158.5,    0.0 !  !END!
5637 ! X =   397.67800,  6955.83800,  439.1,    0.0 !  !END!
5638 ! X =   397.77800,  6955.83800,  437.5,    0.0 !  !END!
5639 ! X =   397.87800,  6955.83800,  435.0,    0.0 !  !END!
5640 ! X =   397.97800,  6955.83800,  433.5,    0.0 !  !END!
5641 ! X =   398.07800,  6955.83800,  432.5,    0.0 !  !END!
5642 ! X =   398.17800,  6955.83800,  431.8,    0.0 !  !END!
5643 ! X =   398.27800,  6955.83800,  432.5,    0.0 !  !END!
5644 ! X =   398.37800,  6955.83800,  430.6,    0.0 !  !END!
5645 ! X =   398.47800,  6955.83800,  424.3,    0.0 !  !END!
5646 ! X =   398.57800,  6955.83800,  420.8,    0.0 !  !END!
5647 ! X =   398.67800,  6955.83800,  413.0,    0.0 !  !END!
5648 ! X =   398.77800,  6955.83800,  409.9,    0.0 !  !END!
5649 ! X =   398.87800,  6955.83800,  404.4,    0.0 !  !END!
5650 ! X =   398.97800,  6955.83800,  398.8,    0.0 !  !END!
5651 ! X =   399.07800,  6955.83800,  380.0,    0.0 !  !END!
5652 ! X =   399.17800,  6955.83800,  373.5,    0.0 !  !END!
5653 ! X =   399.27800,  6955.83800,  352.9,    0.0 !  !END!
5654 ! X =   399.37800,  6955.83800,  348.0,    0.0 !  !END!
5655 ! X =   399.47800,  6955.83800,  335.0,    0.0 !  !END!
5656 ! X =   399.57800,  6955.83800,  333.1,    0.0 !  !END!
5657 ! X =   399.67800,  6955.83800,  330.0,    0.0 !  !END!
5658 ! X =   399.77800,  6955.83800,  332.7,    0.0 !  !END!
5659 ! X =   399.87800,  6955.83800,  357.0,    0.0 !  !END!
5660 ! X =   399.97800,  6955.83800,  358.9,    0.0 !  !END!
5661 ! X =   400.07800,  6955.83800,  372.4,    0.0 !  !END!
5662 ! X =   400.17800,  6955.83800,  371.8,    0.0 !  !END!
5663 ! X =   400.27800,  6955.83800,  381.3,    0.0 !  !END!
5664 ! X =   400.37800,  6955.83800,  380.1,    0.0 !  !END!
5665 ! X =   400.47800,  6955.83800,  387.5,    0.0 !  !END!
5666 ! X =   400.57800,  6955.83800,  386.6,    0.0 !  !END!
5667 ! X =   400.67800,  6955.83800,  391.0,    0.0 !  !END!
5668 ! X =   400.77800,  6955.83800,  387.0,    0.0 !  !END!
5669 ! X =   400.87800,  6955.83800,  370.0,    0.0 !  !END!
5670 ! X =   400.97800,  6955.83800,  362.0,    0.0 !  !END!
5671 ! X =   401.07800,  6955.83800,  331.4,    0.0 !  !END!
5672 ! X =   401.17800,  6955.83800,  326.8,    0.0 !  !END!
5673 ! X =   401.27800,  6955.83800,  321.2,    0.0 !  !END!
5674 ! X =   401.27800,  6955.83800,  321.2,    0.0 !  !END!
5675 ! X =   401.37800,  6955.83800,  319.9,    0.0 !  !END!
5676 ! X =   401.37800,  6955.83800,  319.9,    0.0 !  !END!
5677 ! X =   401.47800,  6955.83800,  323.3,    0.0 !  !END!
5678 ! X =   401.47800,  6955.83800,  323.3,    0.0 !  !END!
5679 ! X =   401.57800,  6955.83800,  323.5,    0.0 !  !END!
5680 ! X =   401.57800,  6955.83800,  323.5,    0.0 !  !END!
5681 ! X =   401.67800,  6955.83800,  329.2,    0.0 !  !END!
5682 ! X =   401.67800,  6955.83800,  329.2,    0.0 !  !END!
5683 ! X =   401.77800,  6955.83800,  330.1,    0.0 !  !END!
5684 ! X =   401.77800,  6955.83800,  330.1,    0.0 !  !END!
5685 ! X =   401.87800,  6955.83800,  341.7,    0.0 !  !END!
5686 ! X =   401.87800,  6955.83800,  341.7,    0.0 !  !END!
5687 ! X =   401.97800,  6955.83800,  342.6,    0.0 !  !END!
5688 ! X =   401.97800,  6955.83800,  342.6,    0.0 !  !END!
5689 ! X =   402.07800,  6955.83800,  349.9,    0.0 !  !END!
5690 ! X =   402.07800,  6955.83800,  349.9,    0.0 !  !END!
5691 ! X =   402.17800,  6955.83800,  349.8,    0.0 !  !END!
5692 ! X =   402.17800,  6955.83800,  349.8,    0.0 !  !END!
5693 ! X =   402.27800,  6955.83800,  349.2,    0.0 !  !END!
5694 ! X =   402.37800,  6955.83800,  344.6,    0.0 !  !END!
5695 ! X =   402.47800,  6955.83800,  325.7,    0.0 !  !END!
5696 ! X =   402.57800,  6955.83800,  322.7,    0.0 !  !END!
5697 ! X =   402.67800,  6955.83800,  320.4,    0.0 !  !END!
5698 ! X =   402.77800,  6955.83800,  318.4,    0.0 !  !END!
5699 ! X =   402.87800,  6955.83800,  313.1,    0.0 !  !END!
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5700 ! X = 402.97800, 6955.83800, 309.5, 0.0 ! !END!
5701 ! X = 403.07800, 6955.83800, 295.4, 0.0 ! !END!
5702 ! X = 403.17800, 6955.83800, 292.3, 0.0 ! !END!
5703 ! X = 403.27800, 6955.83800, 279.1, 0.0 ! !END!
5704 ! X = 403.37800, 6955.83800, 278.3, 0.0 ! !END!
5705 ! X = 405.67800, 6955.83800, 252.1, 0.0 ! !END!
5706 ! X = 405.77800, 6955.83800, 251.2, 0.0 ! !END!
5707 ! X = 405.87800, 6955.83800, 249.8, 0.0 ! !END!
5708 ! X = 405.97800, 6955.83800, 249.8, 0.0 ! !END!
5709 ! X = 406.07800, 6955.83800, 256.0, 0.0 ! !END!
5710 ! X = 406.17800, 6955.83800, 254.4, 0.0 ! !END!
5711 ! X = 406.27800, 6955.83800, 243.9, 0.0 ! !END!
5712 ! X = 406.37800, 6955.83800, 242.3, 0.0 ! !END!
5713 ! X = 406.47800, 6955.83800, 233.0, 0.0 ! !END!
5714 ! X = 406.57800, 6955.83800, 233.4, 0.0 ! !END!
5715 ! X = 406.67800, 6955.83800, 231.2, 0.0 ! !END!
5716 ! X = 406.77800, 6955.83800, 230.8, 0.0 ! !END!
5717 ! X = 406.87800, 6955.83800, 223.8, 0.0 ! !END!
5718 ! X = 406.97800, 6955.83800, 221.4, 0.0 ! !END!
5719 ! X = 407.07800, 6955.83800, 209.2, 0.0 ! !END!
5720 ! X = 407.17800, 6955.83800, 206.8, 0.0 ! !END!
5721 ! X = 407.27800, 6955.83800, 195.8, 0.0 ! !END!
5722 ! X = 407.37800, 6955.83800, 195.0, 0.0 ! !END!
5723 ! X = 407.47800, 6955.83800, 190.6, 0.0 ! !END!
5724 ! X = 407.57800, 6955.83800, 189.7, 0.0 ! !END!
5725 ! X = 407.67800, 6955.83800, 185.8, 0.0 ! !END!
5726 ! X = 407.77800, 6955.83800, 184.9, 0.0 ! !END!
5727 ! X = 407.87800, 6955.83800, 180.5, 0.0 ! !END!
5728 ! X = 407.97800, 6955.83800, 182.5, 0.0 ! !END!
5729 ! X = 408.07800, 6955.83800, 190.3, 0.0 ! !END!
5730 ! X = 408.17800, 6955.83800, 189.4, 0.0 ! !END!
5731 ! X = 408.17800, 6955.83800, 189.4, 0.0 ! !END!
5732 ! X = 408.27800, 6955.83800, 176.8, 0.0 ! !END!
5733 ! X = 408.27800, 6955.83800, 176.8, 0.0 ! !END!
5734 ! X = 408.37800, 6955.83800, 175.5, 0.0 ! !END!
5735 ! X = 408.37800, 6955.83800, 175.5, 0.0 ! !END!
5736 ! X = 408.47800, 6955.83800, 168.8, 0.0 ! !END!
5737 ! X = 408.47800, 6955.83800, 168.8, 0.0 ! !END!
5738 ! X = 408.57800, 6955.83800, 168.9, 0.0 ! !END!
5739 ! X = 408.57800, 6955.83800, 168.9, 0.0 ! !END!
5740 ! X = 408.67800, 6955.83800, 167.3, 0.0 ! !END!
5741 ! X = 408.67800, 6955.83800, 167.3, 0.0 ! !END!
5742 ! X = 408.77800, 6955.83800, 167.6, 0.0 ! !END!
5743 ! X = 408.77800, 6955.83800, 167.6, 0.0 ! !END!
5744 ! X = 408.87800, 6955.83800, 167.1, 0.0 ! !END!
5745 ! X = 408.87800, 6955.83800, 167.1, 0.0 ! !END!
5746 ! X = 408.97800, 6955.83800, 166.6, 0.0 ! !END!
5747 ! X = 409.07800, 6955.83800, 163.2, 0.0 ! !END!
5748 ! X = 409.17800, 6955.83800, 162.6, 0.0 ! !END!
5749 ! X = 409.27800, 6955.83800, 160.5, 0.0 ! !END!
5750 ! X = 409.37800, 6955.83800, 160.0, 0.0 ! !END!
5751 ! X = 409.47800, 6955.83800, 156.9, 0.0 ! !END!
5752 ! X = 397.67800, 6955.73800, 440.7, 0.0 ! !END!
5753 ! X = 397.77800, 6955.73800, 434.7, 0.0 ! !END!
5754 ! X = 397.87800, 6955.73800, 424.3, 0.0 ! !END!
5755 ! X = 397.97800, 6955.73800, 421.8, 0.0 ! !END!
5756 ! X = 398.07800, 6955.73800, 418.5, 0.0 ! !END!
5757 ! X = 398.17800, 6955.73800, 419.6, 0.0 ! !END!
5758 ! X = 398.27800, 6955.73800, 423.2, 0.0 ! !END!
5759 ! X = 398.37800, 6955.73800, 421.9, 0.0 ! !END!
5760 ! X = 398.47800, 6955.73800, 415.0, 0.0 ! !END!
5761 ! X = 398.57800, 6955.73800, 410.0, 0.0 ! !END!
5762 ! X = 398.67800, 6955.73800, 399.8, 0.0 ! !END!
5763 ! X = 398.77800, 6955.73800, 396.4, 0.0 ! !END!
5764 ! X = 398.87800, 6955.73800, 391.7, 0.0 ! !END!
5765 ! X = 398.97800, 6955.73800, 385.5, 0.0 ! !END!
5766 ! X = 399.07800, 6955.73800, 372.3, 0.0 ! !END!
5767 ! X = 399.17800, 6955.73800, 363.2, 0.0 ! !END!
5768 ! X = 399.27800, 6955.73800, 351.3, 0.0 ! !END!
5769 ! X = 399.37800, 6955.73800, 343.4, 0.0 ! !END!
5770 ! X = 399.47800, 6955.73800, 333.9, 0.0 ! !END!

5771 ! X =	399.57800,	6955.73800,	329.7,	0.0 !	!END!
5772 ! X =	399.67800,	6955.73800,	326.3,	0.0 !	!END!
5773 ! X =	399.77800,	6955.73800,	330.2,	0.0 !	!END!
5774 ! X =	399.87800,	6955.73800,	337.4,	0.0 !	!END!
5775 ! X =	399.97800,	6955.73800,	344.4,	0.0 !	!END!
5776 ! X =	400.07800,	6955.73800,	349.7,	0.0 !	!END!
5777 ! X =	400.17800,	6955.73800,	353.1,	0.0 !	!END!
5778 ! X =	400.27800,	6955.73800,	353.8,	0.0 !	!END!
5779 ! X =	400.37800,	6955.73800,	356.5,	0.0 !	!END!
5780 ! X =	400.47800,	6955.73800,	360.0,	0.0 !	!END!
5781 ! X =	400.57800,	6955.73800,	363.5,	0.0 !	!END!
5782 ! X =	400.67800,	6955.73800,	368.4,	0.0 !	!END!
5783 ! X =	400.77800,	6955.73800,	366.4,	0.0 !	!END!
5784 ! X =	400.87800,	6955.73800,	358.6,	0.0 !	!END!
5785 ! X =	400.97800,	6955.73800,	348.4,	0.0 !	!END!
5786 ! X =	401.07800,	6955.73800,	332.2,	0.0 !	!END!
5787 ! X =	401.17800,	6955.73800,	322.5,	0.0 !	!END!
5788 ! X =	401.27800,	6955.73800,	310.0,	0.0 !	!END!
5789 ! X =	401.37800,	6955.73800,	308.0,	0.0 !	!END!
5790 ! X =	401.37800,	6955.73800,	308.0,	0.0 !	!END!
5791 ! X =	401.47800,	6955.73800,	307.0,	0.0 !	!END!
5792 ! X =	401.47800,	6955.73800,	307.0,	0.0 !	!END!
5793 ! X =	401.57800,	6955.73800,	309.1,	0.0 !	!END!
5794 ! X =	401.57800,	6955.73800,	309.1,	0.0 !	!END!
5795 ! X =	401.67800,	6955.73800,	312.4,	0.0 !	!END!
5796 ! X =	401.67800,	6955.73800,	312.4,	0.0 !	!END!
5797 ! X =	401.77800,	6955.73800,	316.4,	0.0 !	!END!
5798 ! X =	401.77800,	6955.73800,	316.4,	0.0 !	!END!
5799 ! X =	401.87800,	6955.73800,	322.6,	0.0 !	!END!
5800 ! X =	401.87800,	6955.73800,	322.6,	0.0 !	!END!
5801 ! X =	401.97800,	6955.73800,	327.7,	0.0 !	!END!
5802 ! X =	401.97800,	6955.73800,	327.7,	0.0 !	!END!
5803 ! X =	402.07800,	6955.73800,	335.1,	0.0 !	!END!
5804 ! X =	402.07800,	6955.73800,	335.1,	0.0 !	!END!
5805 ! X =	402.17800,	6955.73800,	337.2,	0.0 !	!END!
5806 ! X =	402.17800,	6955.73800,	337.2,	0.0 !	!END!
5807 ! X =	402.27800,	6955.73800,	336.5,	0.0 !	!END!
5808 ! X =	402.37800,	6955.73800,	331.2,	0.0 !	!END!
5809 ! X =	402.47800,	6955.73800,	319.2,	0.0 !	!END!
5810 ! X =	402.57800,	6955.73800,	314.0,	0.0 !	!END!
5811 ! X =	402.67800,	6955.73800,	309.5,	0.0 !	!END!
5812 ! X =	402.77800,	6955.73800,	307.8,	0.0 !	!END!
5813 ! X =	402.87800,	6955.73800,	304.8,	0.0 !	!END!
5814 ! X =	402.97800,	6955.73800,	300.8,	0.0 !	!END!
5815 ! X =	403.07800,	6955.73800,	294.4,	0.0 !	!END!
5816 ! X =	403.17800,	6955.73800,	289.6,	0.0 !	!END!
5817 ! X =	403.27800,	6955.73800,	285.9,	0.0 !	!END!
5818 ! X =	405.87800,	6955.73800,	238.6,	0.0 !	!END!
5819 ! X =	405.97800,	6955.73800,	240.2,	0.0 !	!END!
5820 ! X =	406.07800,	6955.73800,	245.4,	0.0 !	!END!
5821 ! X =	406.17800,	6955.73800,	246.8,	0.0 !	!END!
5822 ! X =	406.27800,	6955.73800,	250.7,	0.0 !	!END!
5823 ! X =	406.37800,	6955.73800,	248.4,	0.0 !	!END!
5824 ! X =	406.47800,	6955.73800,	247.0,	0.0 !	!END!
5825 ! X =	406.57800,	6955.73800,	245.0,	0.0 !	!END!
5826 ! X =	406.67800,	6955.73800,	243.1,	0.0 !	!END!
5827 ! X =	406.77800,	6955.73800,	239.9,	0.0 !	!END!
5828 ! X =	406.87800,	6955.73800,	231.3,	0.0 !	!END!
5829 ! X =	406.97800,	6955.73800,	225.1,	0.0 !	!END!
5830 ! X =	407.07800,	6955.73800,	214.1,	0.0 !	!END!
5831 ! X =	407.17800,	6955.73800,	208.7,	0.0 !	!END!
5832 ! X =	407.27800,	6955.73800,	203.1,	0.0 !	!END!
5833 ! X =	407.37800,	6955.73800,	199.9,	0.0 !	!END!
5834 ! X =	407.47800,	6955.73800,	195.9,	0.0 !	!END!
5835 ! X =	407.57800,	6955.73800,	193.0,	0.0 !	!END!
5836 ! X =	407.67800,	6955.73800,	187.8,	0.0 !	!END!
5837 ! X =	407.77800,	6955.73800,	186.1,	0.0 !	!END!
5838 ! X =	407.87800,	6955.73800,	186.9,	0.0 !	!END!
5839 ! X =	407.97800,	6955.73800,	189.2,	0.0 !	!END!
5840 ! X =	408.07800,	6955.73800,	195.2,	0.0 !	!END!
5841 ! X =	408.17800,	6955.73800,	194.1,	0.0 !	!END!

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5842 ! X =   408.17800,  6955.73800,  194.1,    0.0 !  !END!
5843 ! X =   408.27800,  6955.73800,  188.3,    0.0 !  !END!
5844 ! X =   408.27800,  6955.73800,  188.3,    0.0 !  !END!
5845 ! X =   408.37800,  6955.73800,  183.4,    0.0 !  !END!
5846 ! X =   408.37800,  6955.73800,  183.4,    0.0 !  !END!
5847 ! X =   408.47800,  6955.73800,  177.3,    0.0 !  !END!
5848 ! X =   408.47800,  6955.73800,  177.3,    0.0 !  !END!
5849 ! X =   408.57800,  6955.73800,  175.2,    0.0 !  !END!
5850 ! X =   408.57800,  6955.73800,  175.2,    0.0 !  !END!
5851 ! X =   408.67800,  6955.73800,  173.5,    0.0 !  !END!
5852 ! X =   408.67800,  6955.73800,  173.5,    0.0 !  !END!
5853 ! X =   408.77800,  6955.73800,  172.5,    0.0 !  !END!
5854 ! X =   408.77800,  6955.73800,  172.5,    0.0 !  !END!
5855 ! X =   408.87800,  6955.73800,  169.8,    0.0 !  !END!
5856 ! X =   408.87800,  6955.73800,  169.8,    0.0 !  !END!
5857 ! X =   408.97800,  6955.73800,  168.3,    0.0 !  !END!
5858 ! X =   408.97800,  6955.73800,  168.3,    0.0 !  !END!
5859 ! X =   409.07800,  6955.73800,  165.4,    0.0 !  !END!
5860 ! X =   409.17800,  6955.73800,  164.1,    0.0 !  !END!
5861 ! X =   409.27800,  6955.73800,  162.9,    0.0 !  !END!
5862 ! X =   409.37800,  6955.73800,  161.9,    0.0 !  !END!
5863 ! X =   409.47800,  6955.73800,  161.7,    0.0 !  !END!
5864 ! X =   409.57800,  6955.73800,  162.6,    0.0 !  !END!
5865 ! X =   409.67800,  6955.73800,  165.8,    0.0 !  !END!
5866 ! X =   397.57800,  6955.63800,  462.5,    0.0 !  !END!
5867 ! X =   397.67800,  6955.63800,  439.3,    0.0 !  !END!
5868 ! X =   397.77800,  6955.63800,  435.4,    0.0 !  !END!
5869 ! X =   397.87800,  6955.63800,  416.4,    0.0 !  !END!
5870 ! X =   397.97800,  6955.63800,  414.1,    0.0 !  !END!
5871 ! X =   398.07800,  6955.63800,  407.9,    0.0 !  !END!
5872 ! X =   398.17800,  6955.63800,  408.6,    0.0 !  !END!
5873 ! X =   398.27800,  6955.63800,  419.7,    0.0 !  !END!
5874 ! X =   398.37800,  6955.63800,  416.9,    0.0 !  !END!
5875 ! X =   398.47800,  6955.63800,  406.9,    0.0 !  !END!
5876 ! X =   398.57800,  6955.63800,  402.0,    0.0 !  !END!
5877 ! X =   398.67800,  6955.63800,  387.5,    0.0 !  !END!
5878 ! X =   398.77800,  6955.63800,  385.3,    0.0 !  !END!
5879 ! X =   398.87800,  6955.63800,  383.3,    0.0 !  !END!
5880 ! X =   398.97800,  6955.63800,  379.4,    0.0 !  !END!
5881 ! X =   399.07800,  6955.63800,  361.4,    0.0 !  !END!
5882 ! X =   399.17800,  6955.63800,  358.2,    0.0 !  !END!
5883 ! X =   399.27800,  6955.63800,  345.8,    0.0 !  !END!
5884 ! X =   399.37800,  6955.63800,  343.3,    0.0 !  !END!
5885 ! X =   399.47800,  6955.63800,  330.0,    0.0 !  !END!
5886 ! X =   399.57800,  6955.63800,  328.7,    0.0 !  !END!
5887 ! X =   399.67800,  6955.63800,  323.1,    0.0 !  !END!
5888 ! X =   399.77800,  6955.63800,  323.5,    0.0 !  !END!
5889 ! X =   399.87800,  6955.63800,  329.9,    0.0 !  !END!
5890 ! X =   399.97800,  6955.63800,  330.9,    0.0 !  !END!
5891 ! X =   400.07800,  6955.63800,  338.9,    0.0 !  !END!
5892 ! X =   400.17800,  6955.63800,  337.7,    0.0 !  !END!
5893 ! X =   400.27800,  6955.63800,  336.9,    0.0 !  !END!
5894 ! X =   400.37800,  6955.63800,  336.1,    0.0 !  !END!
5895 ! X =   400.47800,  6955.63800,  343.4,    0.0 !  !END!
5896 ! X =   400.57800,  6955.63800,  343.5,    0.0 !  !END!
5897 ! X =   400.67800,  6955.63800,  356.3,    0.0 !  !END!
5898 ! X =   400.77800,  6955.63800,  352.9,    0.0 !  !END!
5899 ! X =   400.87800,  6955.63800,  346.4,    0.0 !  !END!
5900 ! X =   400.97800,  6955.63800,  340.3,    0.0 !  !END!
5901 ! X =   401.07800,  6955.63800,  325.0,    0.0 !  !END!
5902 ! X =   401.17800,  6955.63800,  318.0,    0.0 !  !END!
5903 ! X =   401.27800,  6955.63800,  298.5,    0.0 !  !END!
5904 ! X =   401.37800,  6955.63800,  296.1,    0.0 !  !END!
5905 ! X =   401.37800,  6955.63800,  296.1,    0.0 !  !END!
5906 ! X =   401.47800,  6955.63800,  297.7,    0.0 !  !END!
5907 ! X =   401.47800,  6955.63800,  297.7,    0.0 !  !END!
5908 ! X =   401.57800,  6955.63800,  297.6,    0.0 !  !END!
5909 ! X =   401.57800,  6955.63800,  297.6,    0.0 !  !END!
5910 ! X =   401.67800,  6955.63800,  303.3,    0.0 !  !END!
5911 ! X =   401.67800,  6955.63800,  303.3,    0.0 !  !END!
5912 ! X =   401.77800,  6955.63800,  304.3,    0.0 !  !END!
```

```
5913 ! X =   401.77800,  6955.63800,  304.3,    0.0 !  !END!
5914 ! X =   401.87800,  6955.63800,  313.2,    0.0 !  !END!
5915 ! X =   401.87800,  6955.63800,  313.2,    0.0 !  !END!
5916 ! X =   401.97800,  6955.63800,  315.1,    0.0 !  !END!
5917 ! X =   401.97800,  6955.63800,  315.1,    0.0 !  !END!
5918 ! X =   402.07800,  6955.63800,  329.0,    0.0 !  !END!
5919 ! X =   402.07800,  6955.63800,  329.0,    0.0 !  !END!
5920 ! X =   402.17800,  6955.63800,  328.2,    0.0 !  !END!
5921 ! X =   402.27800,  6955.63800,  328.9,    0.0 !  !END!
5922 ! X =   402.37800,  6955.63800,  324.8,    0.0 !  !END!
5923 ! X =   402.47800,  6955.63800,  309.3,    0.0 !  !END!
5924 ! X =   402.57800,  6955.63800,  306.3,    0.0 !  !END!
5925 ! X =   402.67800,  6955.63800,  301.6,    0.0 !  !END!
5926 ! X =   402.77800,  6955.63800,  300.3,    0.0 !  !END!
5927 ! X =   402.87800,  6955.63800,  298.8,    0.0 !  !END!
5928 ! X =   402.97800,  6955.63800,  296.9,    0.0 !  !END!
5929 ! X =   403.07800,  6955.63800,  289.5,    0.0 !  !END!
5930 ! X =   403.17800,  6955.63800,  288.7,    0.0 !  !END!
5931 ! X =   405.97800,  6955.63800,  230.3,    0.0 !  !END!
5932 ! X =   406.07800,  6955.63800,  238.9,    0.0 !  !END!
5933 ! X =   406.17800,  6955.63800,  240.6,    0.0 !  !END!
5934 ! X =   406.27800,  6955.63800,  253.5,    0.0 !  !END!
5935 ! X =   406.37800,  6955.63800,  252.4,    0.0 !  !END!
5936 ! X =   406.47800,  6955.63800,  252.4,    0.0 !  !END!
5937 ! X =   406.57800,  6955.63800,  250.9,    0.0 !  !END!
5938 ! X =   406.67800,  6955.63800,  250.5,    0.0 !  !END!
5939 ! X =   406.77800,  6955.63800,  247.4,    0.0 !  !END!
5940 ! X =   406.87800,  6955.63800,  233.5,    0.0 !  !END!
5941 ! X =   406.97800,  6955.63800,  229.7,    0.0 !  !END!
5942 ! X =   407.07800,  6955.63800,  212.9,    0.0 !  !END!
5943 ! X =   407.17800,  6955.63800,  211.0,    0.0 !  !END!
5944 ! X =   407.27800,  6955.63800,  205.4,    0.0 !  !END!
5945 ! X =   407.37800,  6955.63800,  203.6,    0.0 !  !END!
5946 ! X =   407.47800,  6955.63800,  198.1,    0.0 !  !END!
5947 ! X =   407.57800,  6955.63800,  195.6,    0.0 !  !END!
5948 ! X =   407.67800,  6955.63800,  186.1,    0.0 !  !END!
5949 ! X =   407.77800,  6955.63800,  186.7,    0.0 !  !END!
5950 ! X =   407.87800,  6955.63800,  190.3,    0.0 !  !END!
5951 ! X =   407.97800,  6955.63800,  192.3,    0.0 !  !END!
5952 ! X =   408.07800,  6955.63800,  201.2,    0.0 !  !END!
5953 ! X =   408.07800,  6955.63800,  201.2,    0.0 !  !END!
5954 ! X =   408.17800,  6955.63800,  200.2,    0.0 !  !END!
5955 ! X =   408.17800,  6955.63800,  200.2,    0.0 !  !END!
5956 ! X =   408.27800,  6955.63800,  192.2,    0.0 !  !END!
5957 ! X =   408.27800,  6955.63800,  192.2,    0.0 !  !END!
5958 ! X =   408.37800,  6955.63800,  189.4,    0.0 !  !END!
5959 ! X =   408.37800,  6955.63800,  189.4,    0.0 !  !END!
5960 ! X =   408.47800,  6955.63800,  179.7,    0.0 !  !END!
5961 ! X =   408.47800,  6955.63800,  179.7,    0.0 !  !END!
5962 ! X =   408.57800,  6955.63800,  178.6,    0.0 !  !END!
5963 ! X =   408.57800,  6955.63800,  178.6,    0.0 !  !END!
5964 ! X =   408.67800,  6955.63800,  177.4,    0.0 !  !END!
5965 ! X =   408.67800,  6955.63800,  177.4,    0.0 !  !END!
5966 ! X =   408.77800,  6955.63800,  176.6,    0.0 !  !END!
5967 ! X =   408.77800,  6955.63800,  176.6,    0.0 !  !END!
5968 ! X =   408.87800,  6955.63800,  171.1,    0.0 !  !END!
5969 ! X =   408.87800,  6955.63800,  171.1,    0.0 !  !END!
5970 ! X =   408.97800,  6955.63800,  170.3,    0.0 !  !END!
5971 ! X =   408.97800,  6955.63800,  170.3,    0.0 !  !END!
5972 ! X =   409.07800,  6955.63800,  165.8,    0.0 !  !END!
5973 ! X =   409.17800,  6955.63800,  165.5,    0.0 !  !END!
5974 ! X =   409.27800,  6955.63800,  163.8,    0.0 !  !END!
5975 ! X =   409.37800,  6955.63800,  164.3,    0.0 !  !END!
5976 ! X =   409.47800,  6955.63800,  164.1,    0.0 !  !END!
5977 ! X =   409.57800,  6955.63800,  165.4,    0.0 !  !END!
5978 ! X =   409.67800,  6955.63800,  170.5,    0.0 !  !END!
5979 ! X =   409.77800,  6955.63800,  169.9,    0.0 !  !END!
5980 ! X =   397.57800,  6955.53800,  473.6,    0.0 !  !END!
5981 ! X =   397.67800,  6955.53800,  456.6,    0.0 !  !END!
5982 ! X =   397.77800,  6955.53800,  445.5,    0.0 !  !END!
5983 ! X =   397.87800,  6955.53800,  428.0,    0.0 !  !END!
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5984 ! X = 397.97800, 6955.53800, 419.1, 0.0 ! !END!
5985 ! X = 398.07800, 6955.53800, 404.8, 0.0 ! !END!
5986 ! X = 398.17800, 6955.53800, 403.8, 0.0 ! !END!
5987 ! X = 398.27800, 6955.53800, 402.4, 0.0 ! !END!
5988 ! X = 398.37800, 6955.53800, 401.1, 0.0 ! !END!
5989 ! X = 398.47800, 6955.53800, 393.3, 0.0 ! !END!
5990 ! X = 398.57800, 6955.53800, 387.8, 0.0 ! !END!
5991 ! X = 398.67800, 6955.53800, 380.7, 0.0 ! !END!
5992 ! X = 398.77800, 6955.53800, 377.3, 0.0 ! !END!
5993 ! X = 398.87800, 6955.53800, 373.6, 0.0 ! !END!
5994 ! X = 398.97800, 6955.53800, 368.7, 0.0 ! !END!
5995 ! X = 399.07800, 6955.53800, 359.6, 0.0 ! !END!
5996 ! X = 399.17800, 6955.53800, 354.2, 0.0 ! !END!
5997 ! X = 399.27800, 6955.53800, 350.4, 0.0 ! !END!
5998 ! X = 399.37800, 6955.53800, 345.4, 0.0 ! !END!
5999 ! X = 399.67800, 6955.53800, 327.5, 0.0 ! !END!
6000 ! X = 399.77800, 6955.53800, 326.0, 0.0 ! !END!
6001 ! X = 399.87800, 6955.53800, 322.4, 0.0 ! !END!
6002 ! X = 399.97800, 6955.53800, 323.5, 0.0 ! !END!
6003 ! X = 400.07800, 6955.53800, 322.4, 0.0 ! !END!
6004 ! X = 400.17800, 6955.53800, 322.4, 0.0 ! !END!
6005 ! X = 400.27800, 6955.53800, 319.1, 0.0 ! !END!
6006 ! X = 400.37800, 6955.53800, 319.4, 0.0 ! !END!
6007 ! X = 400.47800, 6955.53800, 319.0, 0.0 ! !END!
6008 ! X = 400.57800, 6955.53800, 322.2, 0.0 ! !END!
6009 ! X = 400.67800, 6955.53800, 323.8, 0.0 ! !END!
6010 ! X = 400.77800, 6955.53800, 324.3, 0.0 ! !END!
6011 ! X = 400.87800, 6955.53800, 320.0, 0.0 ! !END!
6012 ! X = 400.97800, 6955.53800, 315.2, 0.0 ! !END!
6013 ! X = 401.07800, 6955.53800, 306.5, 0.0 ! !END!
6014 ! X = 401.17800, 6955.53800, 299.5, 0.0 ! !END!
6015 ! X = 401.27800, 6955.53800, 291.8, 0.0 ! !END!
6016 ! X = 401.37800, 6955.53800, 288.2, 0.0 ! !END!
6017 ! X = 401.47800, 6955.53800, 286.7, 0.0 ! !END!
6018 ! X = 401.47800, 6955.53800, 286.7, 0.0 ! !END!
6019 ! X = 401.57800, 6955.53800, 287.7, 0.0 ! !END!
6020 ! X = 401.57800, 6955.53800, 287.7, 0.0 ! !END!
6021 ! X = 401.67800, 6955.53800, 289.8, 0.0 ! !END!
6022 ! X = 401.67800, 6955.53800, 289.8, 0.0 ! !END!
6023 ! X = 401.77800, 6955.53800, 293.8, 0.0 ! !END!
6024 ! X = 401.77800, 6955.53800, 293.8, 0.0 ! !END!
6025 ! X = 401.87800, 6955.53800, 301.2, 0.0 ! !END!
6026 ! X = 401.87800, 6955.53800, 301.2, 0.0 ! !END!
6027 ! X = 401.97800, 6955.53800, 305.8, 0.0 ! !END!
6028 ! X = 401.97800, 6955.53800, 305.8, 0.0 ! !END!
6029 ! X = 402.07800, 6955.53800, 309.0, 0.0 ! !END!
6030 ! X = 402.07800, 6955.53800, 309.0, 0.0 ! !END!
6031 ! X = 402.17800, 6955.53800, 311.3, 0.0 ! !END!
6032 ! X = 402.27800, 6955.53800, 310.9, 0.0 ! !END!
6033 ! X = 402.37800, 6955.53800, 308.0, 0.0 ! !END!
6034 ! X = 402.47800, 6955.53800, 302.5, 0.0 ! !END!
6035 ! X = 402.57800, 6955.53800, 298.6, 0.0 ! !END!
6036 ! X = 402.67800, 6955.53800, 295.3, 0.0 ! !END!
6037 ! X = 402.77800, 6955.53800, 293.7, 0.0 ! !END!
6038 ! X = 402.87800, 6955.53800, 291.6, 0.0 ! !END!
6039 ! X = 402.97800, 6955.53800, 289.6, 0.0 ! !END!
6040 ! X = 403.07800, 6955.53800, 286.4, 0.0 ! !END!
6041 ! X = 406.17800, 6955.53800, 230.1, 0.0 ! !END!
6042 ! X = 406.27800, 6955.53800, 237.0, 0.0 ! !END!
6043 ! X = 406.37800, 6955.53800, 239.6, 0.0 ! !END!
6044 ! X = 406.47800, 6955.53800, 240.4, 0.0 ! !END!
6045 ! X = 406.57800, 6955.53800, 242.0, 0.0 ! !END!
6046 ! X = 406.67800, 6955.53800, 247.4, 0.0 ! !END!
6047 ! X = 406.77800, 6955.53800, 244.7, 0.0 ! !END!
6048 ! X = 406.87800, 6955.53800, 237.5, 0.0 ! !END!
6049 ! X = 406.97800, 6955.53800, 230.8, 0.0 ! !END!
6050 ! X = 407.07800, 6955.53800, 222.4, 0.0 ! !END!
6051 ! X = 407.17800, 6955.53800, 216.8, 0.0 ! !END!
6052 ! X = 407.27800, 6955.53800, 208.5, 0.0 ! !END!
6053 ! X = 407.37800, 6955.53800, 204.5, 0.0 ! !END!
6054 ! X = 407.47800, 6955.53800, 197.5, 0.0 ! !END!

6055 ! X = 407.57800, 6955.53800, 193.7, 0.0 ! !END!
6056 ! X = 407.67800, 6955.53800, 190.1, 0.0 ! !END!
6057 ! X = 407.77800, 6955.53800, 190.3, 0.0 ! !END!
6058 ! X = 407.87800, 6955.53800, 195.1, 0.0 ! !END!
6059 ! X = 407.97800, 6955.53800, 197.7, 0.0 ! !END!
6060 ! X = 408.07800, 6955.53800, 198.9, 0.0 ! !END!
6061 ! X = 408.07800, 6955.53800, 198.9, 0.0 ! !END!
6062 ! X = 408.17800, 6955.53800, 198.0, 0.0 ! !END!
6063 ! X = 408.17800, 6955.53800, 198.0, 0.0 ! !END!
6064 ! X = 408.27800, 6955.53800, 192.9, 0.0 ! !END!
6065 ! X = 408.27800, 6955.53800, 192.9, 0.0 ! !END!
6066 ! X = 408.37800, 6955.53800, 188.6, 0.0 ! !END!
6067 ! X = 408.37800, 6955.53800, 188.6, 0.0 ! !END!
6068 ! X = 408.47800, 6955.53800, 182.8, 0.0 ! !END!
6069 ! X = 408.47800, 6955.53800, 182.8, 0.0 ! !END!
6070 ! X = 408.57800, 6955.53800, 180.5, 0.0 ! !END!
6071 ! X = 408.57800, 6955.53800, 180.5, 0.0 ! !END!
6072 ! X = 408.67800, 6955.53800, 179.5, 0.0 ! !END!
6073 ! X = 408.67800, 6955.53800, 179.5, 0.0 ! !END!
6074 ! X = 408.77800, 6955.53800, 178.3, 0.0 ! !END!
6075 ! X = 408.77800, 6955.53800, 178.3, 0.0 ! !END!
6076 ! X = 408.87800, 6955.53800, 176.4, 0.0 ! !END!
6077 ! X = 408.87800, 6955.53800, 176.4, 0.0 ! !END!
6078 ! X = 408.97800, 6955.53800, 174.1, 0.0 ! !END!
6079 ! X = 408.97800, 6955.53800, 174.1, 0.0 ! !END!
6080 ! X = 409.07800, 6955.53800, 170.4, 0.0 ! !END!
6081 ! X = 409.17800, 6955.53800, 168.8, 0.0 ! !END!
6082 ! X = 409.27800, 6955.53800, 167.6, 0.0 ! !END!
6083 ! X = 409.37800, 6955.53800, 167.7, 0.0 ! !END!
6084 ! X = 409.47800, 6955.53800, 169.7, 0.0 ! !END!
6085 ! X = 409.57800, 6955.53800, 170.8, 0.0 ! !END!
6086 ! X = 409.67800, 6955.53800, 171.4, 0.0 ! !END!
6087 ! X = 409.77800, 6955.53800, 170.4, 0.0 ! !END!
6088 ! X = 397.57800, 6955.43800, 488.9, 0.0 ! !END!
6089 ! X = 397.67800, 6955.43800, 464.1, 0.0 ! !END!
6090 ! X = 397.77800, 6955.43800, 460.8, 0.0 ! !END!
6091 ! X = 397.87800, 6955.43800, 432.2, 0.0 ! !END!
6092 ! X = 397.97800, 6955.43800, 427.2, 0.0 ! !END!
6093 ! X = 398.07800, 6955.43800, 399.7, 0.0 ! !END!
6094 ! X = 398.17800, 6955.43800, 398.3, 0.0 ! !END!
6095 ! X = 398.27800, 6955.43800, 395.1, 0.0 ! !END!
6096 ! X = 398.37800, 6955.43800, 394.3, 0.0 ! !END!
6097 ! X = 398.47800, 6955.43800, 382.6, 0.0 ! !END!
6098 ! X = 398.57800, 6955.43800, 382.5, 0.0 ! !END!
6099 ! X = 398.67800, 6955.43800, 374.9, 0.0 ! !END!
6100 ! X = 398.77800, 6955.43800, 374.7, 0.0 ! !END!
6101 ! X = 398.87800, 6955.43800, 368.3, 0.0 ! !END!
6102 ! X = 398.97800, 6955.43800, 367.7, 0.0 ! !END!
6103 ! X = 399.07800, 6955.43800, 354.8, 0.0 ! !END!
6104 ! X = 399.17800, 6955.43800, 356.5, 0.0 ! !END!
6105 ! X = 399.87800, 6955.43800, 318.9, 0.0 ! !END!
6106 ! X = 399.97800, 6955.43800, 318.2, 0.0 ! !END!
6107 ! X = 400.07800, 6955.43800, 314.6, 0.0 ! !END!
6108 ! X = 400.17800, 6955.43800, 314.2, 0.0 ! !END!
6109 ! X = 400.27800, 6955.43800, 308.7, 0.0 ! !END!
6110 ! X = 400.37800, 6955.43800, 308.5, 0.0 ! !END!
6111 ! X = 400.47800, 6955.43800, 306.2, 0.0 ! !END!
6112 ! X = 400.57800, 6955.43800, 306.6, 0.0 ! !END!
6113 ! X = 400.67800, 6955.43800, 307.1, 0.0 ! !END!
6114 ! X = 400.77800, 6955.43800, 307.1, 0.0 ! !END!
6115 ! X = 400.87800, 6955.43800, 303.1, 0.0 ! !END!
6116 ! X = 400.97800, 6955.43800, 301.7, 0.0 ! !END!
6117 ! X = 401.07800, 6955.43800, 291.0, 0.0 ! !END!
6118 ! X = 401.17800, 6955.43800, 289.9, 0.0 ! !END!
6119 ! X = 401.27800, 6955.43800, 283.9, 0.0 ! !END!
6120 ! X = 401.37800, 6955.43800, 283.1, 0.0 ! !END!
6121 ! X = 401.47800, 6955.43800, 280.2, 0.0 ! !END!
6122 ! X = 401.57800, 6955.43800, 280.2, 0.0 ! !END!
6123 ! X = 401.67800, 6955.43800, 282.0, 0.0 ! !END!
6124 ! X = 401.67800, 6955.43800, 282.0, 0.0 ! !END!
6125 ! X = 401.77800, 6955.43800, 283.9, 0.0 ! !END!

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6126 ! X =   401.77800,  6955.43800,   283.9,      0.0 !  !END!
6127 ! X =   401.87800,  6955.43800,   297.6,      0.0 !  !END!
6128 ! X =   401.87800,  6955.43800,   297.6,      0.0 !  !END!
6129 ! X =   401.97800,  6955.43800,   297.3,      0.0 !  !END!
6130 ! X =   402.07800,  6955.43800,   298.6,      0.0 !  !END!
6131 ! X =   402.17800,  6955.43800,   298.1,      0.0 !  !END!
6132 ! X =   402.27800,  6955.43800,   300.0,      0.0 !  !END!
6133 ! X =   402.37800,  6955.43800,   299.0,      0.0 !  !END!
6134 ! X =   402.47800,  6955.43800,   294.9,      0.0 !  !END!
6135 ! X =   402.57800,  6955.43800,   293.8,      0.0 !  !END!
6136 ! X =   402.67800,  6955.43800,   290.5,      0.0 !  !END!
6137 ! X =   402.77800,  6955.43800,   289.9,      0.0 !  !END!
6138 ! X =   402.87800,  6955.43800,   287.1,      0.0 !  !END!
6139 ! X =   406.37800,  6955.43800,   229.6,      0.0 !  !END!
6140 ! X =   406.47800,  6955.43800,   229.8,      0.0 !  !END!
6141 ! X =   406.57800,  6955.43800,   230.9,      0.0 !  !END!
6142 ! X =   406.67800,  6955.43800,   246.7,      0.0 !  !END!
6143 ! X =   406.77800,  6955.43800,   244.2,      0.0 !  !END!
6144 ! X =   406.87800,  6955.43800,   234.6,      0.0 !  !END!
6145 ! X =   406.97800,  6955.43800,   231.5,      0.0 !  !END!
6146 ! X =   407.07800,  6955.43800,   224.8,      0.0 !  !END!
6147 ! X =   407.17800,  6955.43800,   221.2,      0.0 !  !END!
6148 ! X =   407.27800,  6955.43800,   207.9,      0.0 !  !END!
6149 ! X =   407.37800,  6955.43800,   205.2,      0.0 !  !END!
6150 ! X =   407.47800,  6955.43800,   194.7,      0.0 !  !END!
6151 ! X =   407.57800,  6955.43800,   193.8,      0.0 !  !END!
6152 ! X =   407.67800,  6955.43800,   189.7,      0.0 !  !END!
6153 ! X =   407.77800,  6955.43800,   191.3,      0.0 !  !END!
6154 ! X =   407.87800,  6955.43800,   200.5,      0.0 !  !END!
6155 ! X =   407.97800,  6955.43800,   200.4,      0.0 !  !END!
6156 ! X =   408.07800,  6955.43800,   198.7,      0.0 !  !END!
6157 ! X =   408.07800,  6955.43800,   198.7,      0.0 !  !END!
6158 ! X =   408.17800,  6955.43800,   196.9,      0.0 !  !END!
6159 ! X =   408.17800,  6955.43800,   196.9,      0.0 !  !END!
6160 ! X =   408.27800,  6955.43800,   190.6,      0.0 !  !END!
6161 ! X =   408.27800,  6955.43800,   190.6,      0.0 !  !END!
6162 ! X =   408.37800,  6955.43800,   188.5,      0.0 !  !END!
6163 ! X =   408.37800,  6955.43800,   188.5,      0.0 !  !END!
6164 ! X =   408.47800,  6955.43800,   181.3,      0.0 !  !END!
6165 ! X =   408.47800,  6955.43800,   181.3,      0.0 !  !END!
6166 ! X =   408.57800,  6955.43800,   180.7,      0.0 !  !END!
6167 ! X =   408.57800,  6955.43800,   180.7,      0.0 !  !END!
6168 ! X =   408.67800,  6955.43800,   180.4,      0.0 !  !END!
6169 ! X =   408.67800,  6955.43800,   180.4,      0.0 !  !END!
6170 ! X =   408.77800,  6955.43800,   180.6,      0.0 !  !END!
6171 ! X =   408.77800,  6955.43800,   180.6,      0.0 !  !END!
6172 ! X =   408.87800,  6955.43800,   179.3,      0.0 !  !END!
6173 ! X =   408.87800,  6955.43800,   179.3,      0.0 !  !END!
6174 ! X =   408.97800,  6955.43800,   178.7,      0.0 !  !END!
6175 ! X =   408.97800,  6955.43800,   178.7,      0.0 !  !END!
6176 ! X =   409.07800,  6955.43800,   172.1,      0.0 !  !END!
6177 ! X =   409.17800,  6955.43800,   172.1,      0.0 !  !END!
6178 ! X =   409.27800,  6955.43800,   169.3,      0.0 !  !END!
6179 ! X =   409.37800,  6955.43800,   170.6,      0.0 !  !END!
6180 ! X =   409.47800,  6955.43800,   174.2,      0.0 !  !END!
6181 ! X =   409.57800,  6955.43800,   174.6,      0.0 !  !END!
6182 ! X =   409.67800,  6955.43800,   173.3,      0.0 !  !END!
6183 ! X =   409.77800,  6955.43800,   172.4,      0.0 !  !END!
6184 ! X =   409.87800,  6955.43800,   165.1,      0.0 !  !END!
6185 ! X =   397.57800,  6955.33800,   513.7,      0.0 !  !END!
6186 ! X =   397.67800,  6955.33800,   501.5,      0.0 !  !END!
6187 ! X =   397.77800,  6955.33800,   488.3,      0.0 !  !END!
6188 ! X =   397.87800,  6955.33800,   463.4,      0.0 !  !END!
6189 ! X =   397.97800,  6955.33800,   446.8,      0.0 !  !END!
6190 ! X =   398.07800,  6955.33800,   420.2,      0.0 !  !END!
6191 ! X =   398.17800,  6955.33800,   410.8,      0.0 !  !END!
6192 ! X =   398.27800,  6955.33800,   400.8,      0.0 !  !END!
6193 ! X =   398.37800,  6955.33800,   396.7,      0.0 !  !END!
6194 ! X =   398.47800,  6955.33800,   391.0,      0.0 !  !END!
6195 ! X =   398.57800,  6955.33800,   388.1,      0.0 !  !END!
6196 ! X =   398.67800,  6955.33800,   386.4,      0.0 !  !END!
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6197 ! X = 398.77800, 6955.33800, 383.0, 0.0 ! !END!
6198 ! X = 398.87800, 6955.33800, 376.4, 0.0 ! !END!
6199 ! X = 398.97800, 6955.33800, 373.0, 0.0 ! !END!
6200 ! X = 399.07800, 6955.33800, 372.5, 0.0 ! !END!
6201 ! X = 399.97800, 6955.33800, 322.9, 0.0 ! !END!
6202 ! X = 400.07800, 6955.33800, 317.6, 0.0 ! !END!
6203 ! X = 400.17800, 6955.33800, 315.2, 0.0 ! !END!
6204 ! X = 400.27800, 6955.33800, 311.2, 0.0 ! !END!
6205 ! X = 400.37800, 6955.33800, 309.0, 0.0 ! !END!
6206 ! X = 400.47800, 6955.33800, 305.5, 0.0 ! !END!
6207 ! X = 400.57800, 6955.33800, 304.5, 0.0 ! !END!
6208 ! X = 400.67800, 6955.33800, 302.3, 0.0 ! !END!
6209 ! X = 400.77800, 6955.33800, 301.2, 0.0 ! !END!
6210 ! X = 400.87800, 6955.33800, 298.2, 0.0 ! !END!
6211 ! X = 400.97800, 6955.33800, 295.4, 0.0 ! !END!
6212 ! X = 401.07800, 6955.33800, 290.8, 0.0 ! !END!
6213 ! X = 401.17800, 6955.33800, 287.7, 0.0 ! !END!
6214 ! X = 401.87800, 6955.33800, 282.7, 0.0 ! !END!
6215 ! X = 401.97800, 6955.33800, 284.8, 0.0 ! !END!
6216 ! X = 402.07800, 6955.33800, 284.9, 0.0 ! !END!
6217 ! X = 402.17800, 6955.33800, 286.1, 0.0 ! !END!
6218 ! X = 402.27800, 6955.33800, 289.1, 0.0 ! !END!
6219 ! X = 402.37800, 6955.33800, 289.1, 0.0 ! !END!
6220 ! X = 402.47800, 6955.33800, 287.9, 0.0 ! !END!
6221 ! X = 402.57800, 6955.33800, 287.4, 0.0 ! !END!
6222 ! X = 402.67800, 6955.33800, 289.2, 0.0 ! !END!
6223 ! X = 406.47800, 6955.33800, 216.3, 0.0 ! !END!
6224 ! X = 406.57800, 6955.33800, 219.4, 0.0 ! !END!
6225 ! X = 406.67800, 6955.33800, 223.9, 0.0 ! !END!
6226 ! X = 406.77800, 6955.33800, 225.3, 0.0 ! !END!
6227 ! X = 406.87800, 6955.33800, 224.4, 0.0 ! !END!
6228 ! X = 406.97800, 6955.33800, 222.3, 0.0 ! !END!
6229 ! X = 407.07800, 6955.33800, 221.1, 0.0 ! !END!
6230 ! X = 407.17800, 6955.33800, 217.2, 0.0 ! !END!
6231 ! X = 407.27800, 6955.33800, 211.4, 0.0 ! !END!
6232 ! X = 407.37800, 6955.33800, 206.4, 0.0 ! !END!
6233 ! X = 407.47800, 6955.33800, 200.9, 0.0 ! !END!
6234 ! X = 407.57800, 6955.33800, 197.7, 0.0 ! !END!
6235 ! X = 407.67800, 6955.33800, 195.3, 0.0 ! !END!
6236 ! X = 407.77800, 6955.33800, 196.3, 0.0 ! !END!
6237 ! X = 407.87800, 6955.33800, 198.4, 0.0 ! !END!
6238 ! X = 407.97800, 6955.33800, 199.0, 0.0 ! !END!
6239 ! X = 408.07800, 6955.33800, 195.7, 0.0 ! !END!
6240 ! X = 408.17800, 6955.33800, 193.0, 0.0 ! !END!
6241 ! X = 408.17800, 6955.33800, 193.0, 0.0 ! !END!
6242 ! X = 408.27800, 6955.33800, 187.9, 0.0 ! !END!
6243 ! X = 408.27800, 6955.33800, 187.9, 0.0 ! !END!
6244 ! X = 408.37800, 6955.33800, 184.9, 0.0 ! !END!
6245 ! X = 408.37800, 6955.33800, 184.9, 0.0 ! !END!
6246 ! X = 408.47800, 6955.33800, 182.0, 0.0 ! !END!
6247 ! X = 408.47800, 6955.33800, 182.0, 0.0 ! !END!
6248 ! X = 408.57800, 6955.33800, 181.0, 0.0 ! !END!
6249 ! X = 408.57800, 6955.33800, 181.0, 0.0 ! !END!
6250 ! X = 408.67800, 6955.33800, 182.3, 0.0 ! !END!
6251 ! X = 408.67800, 6955.33800, 182.3, 0.0 ! !END!
6252 ! X = 408.77800, 6955.33800, 182.8, 0.0 ! !END!
6253 ! X = 408.77800, 6955.33800, 182.8, 0.0 ! !END!
6254 ! X = 408.87800, 6955.33800, 184.1, 0.0 ! !END!
6255 ! X = 408.87800, 6955.33800, 184.1, 0.0 ! !END!
6256 ! X = 408.97800, 6955.33800, 182.8, 0.0 ! !END!
6257 ! X = 408.97800, 6955.33800, 182.8, 0.0 ! !END!
6258 ! X = 409.07800, 6955.33800, 180.7, 0.0 ! !END!
6259 ! X = 409.17800, 6955.33800, 178.9, 0.0 ! !END!
6260 ! X = 409.27800, 6955.33800, 177.9, 0.0 ! !END!
6261 ! X = 409.37800, 6955.33800, 177.9, 0.0 ! !END!
6262 ! X = 409.47800, 6955.33800, 177.8, 0.0 ! !END!
6263 ! X = 409.57800, 6955.33800, 177.8, 0.0 ! !END!
6264 ! X = 409.67800, 6955.33800, 176.5, 0.0 ! !END!
6265 ! X = 409.77800, 6955.33800, 174.5, 0.0 ! !END!
6266 ! X = 409.87800, 6955.33800, 171.0, 0.0 ! !END!
6267 ! X = 409.97800, 6955.33800, 168.6, 0.0 ! !END!

6268 ! X = 397.67800, 6955.23800, 522.6, 0.0 ! !END!
6269 ! X = 397.77800, 6955.23800, 513.9, 0.0 ! !END!
6270 ! X = 397.87800, 6955.23800, 473.7, 0.0 ! !END!
6271 ! X = 397.97800, 6955.23800, 462.3, 0.0 ! !END!
6272 ! X = 398.07800, 6955.23800, 422.8, 0.0 ! !END!
6273 ! X = 398.17800, 6955.23800, 417.2, 0.0 ! !END!
6274 ! X = 398.27800, 6955.23800, 403.1, 0.0 ! !END!
6275 ! X = 398.37800, 6955.23800, 402.0, 0.0 ! !END!
6276 ! X = 398.47800, 6955.23800, 394.3, 0.0 ! !END!
6277 ! X = 398.57800, 6955.23800, 394.9, 0.0 ! !END!
6278 ! X = 398.67800, 6955.23800, 394.5, 0.0 ! !END!
6279 ! X = 398.77800, 6955.23800, 393.3, 0.0 ! !END!
6280 ! X = 398.87800, 6955.23800, 379.1, 0.0 ! !END!
6281 ! X = 400.27800, 6955.23800, 312.7, 0.0 ! !END!
6282 ! X = 400.37800, 6955.23800, 311.8, 0.0 ! !END!
6283 ! X = 400.47800, 6955.23800, 305.4, 0.0 ! !END!
6284 ! X = 400.57800, 6955.23800, 304.9, 0.0 ! !END!
6285 ! X = 400.67800, 6955.23800, 300.6, 0.0 ! !END!
6286 ! X = 400.77800, 6955.23800, 300.1, 0.0 ! !END!
6287 ! X = 400.87800, 6955.23800, 295.6, 0.0 ! !END!
6288 ! X = 400.97800, 6955.23800, 294.9, 0.0 ! !END!
6289 ! X = 406.67800, 6955.23800, 212.6, 0.0 ! !END!
6290 ! X = 406.77800, 6955.23800, 212.8, 0.0 ! !END!
6291 ! X = 406.87800, 6955.23800, 215.7, 0.0 ! !END!
6292 ! X = 406.97800, 6955.23800, 215.3, 0.0 ! !END!
6293 ! X = 407.07800, 6955.23800, 217.1, 0.0 ! !END!
6294 ! X = 407.17800, 6955.23800, 215.4, 0.0 ! !END!
6295 ! X = 407.27800, 6955.23800, 209.9, 0.0 ! !END!
6296 ! X = 407.37800, 6955.23800, 207.7, 0.0 ! !END!
6297 ! X = 407.47800, 6955.23800, 201.9, 0.0 ! !END!
6298 ! X = 407.57800, 6955.23800, 200.8, 0.0 ! !END!
6299 ! X = 407.67800, 6955.23800, 197.7, 0.0 ! !END!
6300 ! X = 407.77800, 6955.23800, 197.9, 0.0 ! !END!
6301 ! X = 407.87800, 6955.23800, 199.6, 0.0 ! !END!
6302 ! X = 407.97800, 6955.23800, 198.8, 0.0 ! !END!
6303 ! X = 408.07800, 6955.23800, 193.1, 0.0 ! !END!
6304 ! X = 408.17800, 6955.23800, 191.4, 0.0 ! !END!
6305 ! X = 408.17800, 6955.23800, 191.4, 0.0 ! !END!
6306 ! X = 408.27800, 6955.23800, 184.0, 0.0 ! !END!
6307 ! X = 408.27800, 6955.23800, 184.0, 0.0 ! !END!
6308 ! X = 408.37800, 6955.23800, 183.4, 0.0 ! !END!
6309 ! X = 408.37800, 6955.23800, 183.4, 0.0 ! !END!
6310 ! X = 408.47800, 6955.23800, 180.7, 0.0 ! !END!
6311 ! X = 408.47800, 6955.23800, 180.7, 0.0 ! !END!
6312 ! X = 408.57800, 6955.23800, 181.6, 0.0 ! !END!
6313 ! X = 408.57800, 6955.23800, 181.6, 0.0 ! !END!
6314 ! X = 408.67800, 6955.23800, 184.0, 0.0 ! !END!
6315 ! X = 408.67800, 6955.23800, 184.0, 0.0 ! !END!
6316 ! X = 408.77800, 6955.23800, 185.0, 0.0 ! !END!
6317 ! X = 408.77800, 6955.23800, 185.0, 0.0 ! !END!
6318 ! X = 408.87800, 6955.23800, 187.4, 0.0 ! !END!
6319 ! X = 408.87800, 6955.23800, 187.4, 0.0 ! !END!
6320 ! X = 408.97800, 6955.23800, 187.1, 0.0 ! !END!
6321 ! X = 409.07800, 6955.23800, 184.2, 0.0 ! !END!
6322 ! X = 409.17800, 6955.23800, 183.4, 0.0 ! !END!
6323 ! X = 409.27800, 6955.23800, 182.5, 0.0 ! !END!
6324 ! X = 409.37800, 6955.23800, 181.8, 0.0 ! !END!
6325 ! X = 409.47800, 6955.23800, 180.4, 0.0 ! !END!
6326 ! X = 409.57800, 6955.23800, 180.2, 0.0 ! !END!
6327 ! X = 409.67800, 6955.23800, 178.3, 0.0 ! !END!
6328 ! X = 409.77800, 6955.23800, 178.2, 0.0 ! !END!
6329 ! X = 409.87800, 6955.23800, 174.1, 0.0 ! !END!
6330 ! X = 409.97800, 6955.23800, 172.7, 0.0 ! !END!
6331 ! X = 410.07800, 6955.23800, 163.5, 0.0 ! !END!
6332 ! X = 397.77800, 6955.13800, 524.8, 0.0 ! !END!
6333 ! X = 397.87800, 6955.13800, 483.2, 0.0 ! !END!
6334 ! X = 397.97800, 6955.13800, 461.7, 0.0 ! !END!
6335 ! X = 398.07800, 6955.13800, 435.4, 0.0 ! !END!
6336 ! X = 398.17800, 6955.13800, 423.8, 0.0 ! !END!
6337 ! X = 398.27800, 6955.13800, 415.4, 0.0 ! !END!
6338 ! X = 398.37800, 6955.13800, 411.1, 0.0 ! !END!

6339 ! X = 398.47800, 6955.13800, 407.9, 0.0 ! !END!
6340 ! X = 398.57800, 6955.13800, 405.9, 0.0 ! !END!
6341 ! X = 398.67800, 6955.13800, 403.3, 0.0 ! !END!
6342 ! X = 406.77800, 6955.13800, 203.7, 0.0 ! !END!
6343 ! X = 406.87800, 6955.13800, 203.5, 0.0 ! !END!
6344 ! X = 406.97800, 6955.13800, 204.8, 0.0 ! !END!
6345 ! X = 407.07800, 6955.13800, 206.4, 0.0 ! !END!
6346 ! X = 407.17800, 6955.13800, 206.1, 0.0 ! !END!
6347 ! X = 407.27800, 6955.13800, 204.5, 0.0 ! !END!
6348 ! X = 407.37800, 6955.13800, 202.5, 0.0 ! !END!
6349 ! X = 407.47800, 6955.13800, 201.1, 0.0 ! !END!
6350 ! X = 407.57800, 6955.13800, 200.3, 0.0 ! !END!
6351 ! X = 407.67800, 6955.13800, 201.8, 0.0 ! !END!
6352 ! X = 407.77800, 6955.13800, 201.8, 0.0 ! !END!
6353 ! X = 407.87800, 6955.13800, 201.0, 0.0 ! !END!
6354 ! X = 407.97800, 6955.13800, 199.1, 0.0 ! !END!
6355 ! X = 408.07800, 6955.13800, 193.7, 0.0 ! !END!
6356 ! X = 408.17800, 6955.13800, 190.2, 0.0 ! !END!
6357 ! X = 408.27800, 6955.13800, 185.6, 0.0 ! !END!
6358 ! X = 408.27800, 6955.13800, 185.6, 0.0 ! !END!
6359 ! X = 408.37800, 6955.13800, 184.0, 0.0 ! !END!
6360 ! X = 408.37800, 6955.13800, 184.0, 0.0 ! !END!
6361 ! X = 408.47800, 6955.13800, 184.8, 0.0 ! !END!
6362 ! X = 408.47800, 6955.13800, 184.8, 0.0 ! !END!
6363 ! X = 408.57800, 6955.13800, 185.6, 0.0 ! !END!
6364 ! X = 408.57800, 6955.13800, 185.6, 0.0 ! !END!
6365 ! X = 408.67800, 6955.13800, 188.2, 0.0 ! !END!
6366 ! X = 408.67800, 6955.13800, 188.2, 0.0 ! !END!
6367 ! X = 408.77800, 6955.13800, 189.1, 0.0 ! !END!
6368 ! X = 408.77800, 6955.13800, 189.1, 0.0 ! !END!
6369 ! X = 408.87800, 6955.13800, 188.9, 0.0 ! !END!
6370 ! X = 408.97800, 6955.13800, 188.2, 0.0 ! !END!
6371 ! X = 409.07800, 6955.13800, 185.5, 0.0 ! !END!
6372 ! X = 409.17800, 6955.13800, 184.2, 0.0 ! !END!
6373 ! X = 409.27800, 6955.13800, 182.4, 0.0 ! !END!
6374 ! X = 409.37800, 6955.13800, 181.9, 0.0 ! !END!
6375 ! X = 409.47800, 6955.13800, 182.1, 0.0 ! !END!
6376 ! X = 409.57800, 6955.13800, 181.9, 0.0 ! !END!
6377 ! X = 409.67800, 6955.13800, 182.8, 0.0 ! !END!
6378 ! X = 409.77800, 6955.13800, 182.0, 0.0 ! !END!
6379 ! X = 409.87800, 6955.13800, 180.7, 0.0 ! !END!
6380 ! X = 409.97800, 6955.13800, 177.6, 0.0 ! !END!
6381 ! X = 410.07800, 6955.13800, 172.8, 0.0 ! !END!
6382 ! X = 397.87800, 6955.03800, 471.9, 0.0 ! !END!
6383 ! X = 397.97800, 6955.03800, 462.6, 0.0 ! !END!
6384 ! X = 398.07800, 6955.03800, 432.2, 0.0 ! !END!
6385 ! X = 398.17800, 6955.03800, 430.0, 0.0 ! !END!
6386 ! X = 398.27800, 6955.03800, 419.9, 0.0 ! !END!
6387 ! X = 398.37800, 6955.03800, 420.0, 0.0 ! !END!
6388 ! X = 407.07800, 6955.03800, 200.8, 0.0 ! !END!
6389 ! X = 407.17800, 6955.03800, 200.6, 0.0 ! !END!
6390 ! X = 407.27800, 6955.03800, 199.6, 0.0 ! !END!
6391 ! X = 407.37800, 6955.03800, 198.9, 0.0 ! !END!
6392 ! X = 407.47800, 6955.03800, 198.3, 0.0 ! !END!
6393 ! X = 407.57800, 6955.03800, 198.5, 0.0 ! !END!
6394 ! X = 407.67800, 6955.03800, 204.2, 0.0 ! !END!
6395 ! X = 407.77800, 6955.03800, 203.6, 0.0 ! !END!
6396 ! X = 407.87800, 6955.03800, 202.3, 0.0 ! !END!
6397 ! X = 407.97800, 6955.03800, 200.5, 0.0 ! !END!
6398 ! X = 408.07800, 6955.03800, 192.3, 0.0 ! !END!
6399 ! X = 408.17800, 6955.03800, 190.9, 0.0 ! !END!
6400 ! X = 408.27800, 6955.03800, 184.3, 0.0 ! !END!
6401 ! X = 408.37800, 6955.03800, 184.7, 0.0 ! !END!
6402 ! X = 408.47800, 6955.03800, 187.2, 0.0 ! !END!
6403 ! X = 408.47800, 6955.03800, 187.2, 0.0 ! !END!
6404 ! X = 408.57800, 6955.03800, 188.2, 0.0 ! !END!
6405 ! X = 408.57800, 6955.03800, 188.2, 0.0 ! !END!
6406 ! X = 408.97800, 6955.03800, 189.3, 0.0 ! !END!
6407 ! X = 409.07800, 6955.03800, 185.4, 0.0 ! !END!
6408 ! X = 409.17800, 6955.03800, 184.8, 0.0 ! !END!
6409 ! X = 409.27800, 6955.03800, 181.5, 0.0 ! !END!

6410 ! X = 409.37800, 6955.03800, 181.9, 0.0 ! !END!
6411 ! X = 409.47800, 6955.03800, 182.8, 0.0 ! !END!
6412 ! X = 409.57800, 6955.03800, 183.8, 0.0 ! !END!
6413 ! X = 409.67800, 6955.03800, 185.9, 0.0 ! !END!
6414 ! X = 409.77800, 6955.03800, 186.1, 0.0 ! !END!
6415 ! X = 409.87800, 6955.03800, 184.2, 0.0 ! !END!
6416 ! X = 409.97800, 6955.03800, 182.8, 0.0 ! !END!
6417 ! X = 410.07800, 6955.03800, 175.8, 0.0 ! !END!
6418 ! X = 410.17800, 6955.03800, 174.7, 0.0 ! !END!
6419 ! X = 407.37800, 6954.93800, 193.7, 0.0 ! !END!
6420 ! X = 407.47800, 6954.93800, 193.5, 0.0 ! !END!
6421 ! X = 407.57800, 6954.93800, 194.7, 0.0 ! !END!
6422 ! X = 407.67800, 6954.93800, 197.0, 0.0 ! !END!
6423 ! X = 407.77800, 6954.93800, 198.3, 0.0 ! !END!
6424 ! X = 407.87800, 6954.93800, 199.4, 0.0 ! !END!
6425 ! X = 409.07800, 6954.93800, 188.2, 0.0 ! !END!
6426 ! X = 409.17800, 6954.93800, 186.8, 0.0 ! !END!
6427 ! X = 409.27800, 6954.93800, 185.5, 0.0 ! !END!
6428 ! X = 409.37800, 6954.93800, 185.3, 0.0 ! !END!
6429 ! X = 409.47800, 6954.93800, 186.4, 0.0 ! !END!
6430 ! X = 409.57800, 6954.93800, 187.4, 0.0 ! !END!
6431 ! X = 409.67800, 6954.93800, 189.1, 0.0 ! !END!
6432 ! X = 409.77800, 6954.93800, 189.2, 0.0 ! !END!
6433 ! X = 409.87800, 6954.93800, 187.3, 0.0 ! !END!
6434 ! X = 409.97800, 6954.93800, 184.4, 0.0 ! !END!
6435 ! X = 410.07800, 6954.93800, 178.0, 0.0 ! !END!
6436 ! X = 410.17800, 6954.93800, 175.8, 0.0 ! !END!
6437 ! X = 410.27800, 6954.93800, 173.7, 0.0 ! !END!
6438 ! X = 409.17800, 6954.83800, 188.8, 0.0 ! !END!
6439 ! X = 409.27800, 6954.83800, 187.1, 0.0 ! !END!
6440 ! X = 409.37800, 6954.83800, 187.3, 0.0 ! !END!
6441 ! X = 409.47800, 6954.83800, 189.0, 0.0 ! !END!
6442 ! X = 409.57800, 6954.83800, 189.4, 0.0 ! !END!
6443 ! X = 409.67800, 6954.83800, 191.9, 0.0 ! !END!
6444 ! X = 409.77800, 6954.83800, 191.2, 0.0 ! !END!
6445 ! X = 409.87800, 6954.83800, 188.9, 0.0 ! !END!
6446 ! X = 409.97800, 6954.83800, 186.4, 0.0 ! !END!
6447 ! X = 410.07800, 6954.83800, 176.0, 0.0 ! !END!
6448 ! X = 410.17800, 6954.83800, 174.8, 0.0 ! !END!
6449 ! X = 410.27800, 6954.83800, 173.4, 0.0 ! !END!
6450 ! X = 410.37800, 6954.83800, 172.3, 0.0 ! !END!
6451 ! X = 409.27800, 6954.73800, 188.4, 0.0 ! !END!
6452 ! X = 409.37800, 6954.73800, 188.6, 0.0 ! !END!
6453 ! X = 409.47800, 6954.73800, 190.1, 0.0 ! !END!
6454 ! X = 409.57800, 6954.73800, 190.8, 0.0 ! !END!
6455 ! X = 409.67800, 6954.73800, 190.4, 0.0 ! !END!
6456 ! X = 409.77800, 6954.73800, 189.7, 0.0 ! !END!
6457 ! X = 409.87800, 6954.73800, 186.4, 0.0 ! !END!
6458 ! X = 409.97800, 6954.73800, 183.0, 0.0 ! !END!
6459 ! X = 410.07800, 6954.73800, 177.2, 0.0 ! !END!
6460 ! X = 410.17800, 6954.73800, 174.7, 0.0 ! !END!
6461 ! X = 410.27800, 6954.73800, 172.8, 0.0 ! !END!
6462 ! X = 410.37800, 6954.73800, 171.2, 0.0 ! !END!
6463 ! X = 410.47800, 6954.73800, 167.6, 0.0 ! !END!
6464 ! X = 410.57800, 6954.73800, 164.9, 0.0 ! !END!
6465 ! X = 409.37800, 6954.63800, 187.5, 0.0 ! !END!
6466 ! X = 409.47800, 6954.63800, 191.0, 0.0 ! !END!
6467 ! X = 409.57800, 6954.63800, 189.9, 0.0 ! !END!
6468 ! X = 409.67800, 6954.63800, 189.2, 0.0 ! !END!
6469 ! X = 409.77800, 6954.63800, 187.5, 0.0 ! !END!
6470 ! X = 409.87800, 6954.63800, 183.5, 0.0 ! !END!
6471 ! X = 409.97800, 6954.63800, 181.5, 0.0 ! !END!
6472 ! X = 410.07800, 6954.63800, 174.8, 0.0 ! !END!
6473 ! X = 410.17800, 6954.63800, 173.7, 0.0 ! !END!
6474 ! X = 410.27800, 6954.63800, 172.2, 0.0 ! !END!
6475 ! X = 410.37800, 6954.63800, 170.8, 0.0 ! !END!
6476 ! X = 410.47800, 6954.63800, 166.9, 0.0 ! !END!
6477 ! X = 410.57800, 6954.63800, 164.9, 0.0 ! !END!
6478 ! X = 410.67800, 6954.63800, 156.9, 0.0 ! !END!
6479 ! X = 409.37800, 6954.53800, 184.6, 0.0 ! !END!
6480 ! X = 409.47800, 6954.53800, 183.3, 0.0 ! !END!

6481 ! X = 409.57800, 6954.53800, 183.1, 0.0 ! !END!
6482 ! X = 409.67800, 6954.53800, 181.4, 0.0 ! !END!
6483 ! X = 409.77800, 6954.53800, 180.3, 0.0 ! !END!
6484 ! X = 409.87800, 6954.53800, 178.3, 0.0 ! !END!
6485 ! X = 409.97800, 6954.53800, 176.1, 0.0 ! !END!
6486 ! X = 410.07800, 6954.53800, 173.2, 0.0 ! !END!
6487 ! X = 410.17800, 6954.53800, 171.8, 0.0 ! !END!
6488 ! X = 410.27800, 6954.53800, 170.4, 0.0 ! !END!
6489 ! X = 410.37800, 6954.53800, 168.3, 0.0 ! !END!
6490 ! X = 410.47800, 6954.53800, 163.2, 0.0 ! !END!
6491 ! X = 410.57800, 6954.53800, 160.9, 0.0 ! !END!
6492 ! X = 410.67800, 6954.53800, 160.6, 0.0 ! !END!
6493 ! X = 410.77800, 6954.53800, 161.6, 0.0 ! !END!
6494 ! X = 410.87800, 6954.53800, 166.2, 0.0 ! !END!
6495 ! X = 410.97800, 6954.53800, 169.2, 0.0 ! !END!
6496 ! X = 409.47800, 6954.43800, 178.5, 0.0 ! !END!
6497 ! X = 409.57800, 6954.43800, 178.2, 0.0 ! !END!
6498 ! X = 409.67800, 6954.43800, 176.4, 0.0 ! !END!
6499 ! X = 409.77800, 6954.43800, 176.3, 0.0 ! !END!
6500 ! X = 409.87800, 6954.43800, 174.4, 0.0 ! !END!
6501 ! X = 409.97800, 6954.43800, 173.8, 0.0 ! !END!
6502 ! X = 410.07800, 6954.43800, 170.6, 0.0 ! !END!
6503 ! X = 410.17800, 6954.43800, 170.0, 0.0 ! !END!
6504 ! X = 410.27800, 6954.43800, 169.5, 0.0 ! !END!
6505 ! X = 410.37800, 6954.43800, 167.2, 0.0 ! !END!
6506 ! X = 410.47800, 6954.43800, 157.9, 0.0 ! !END!
6507 ! X = 410.57800, 6954.43800, 157.9, 0.0 ! !END!
6508 ! X = 410.67800, 6954.43800, 161.8, 0.0 ! !END!
6509 ! X = 410.77800, 6954.43800, 163.2, 0.0 ! !END!
6510 ! X = 410.87800, 6954.43800, 168.7, 0.0 ! !END!
6511 ! X = 410.97800, 6954.43800, 169.6, 0.0 ! !END!
6512 ! X = 411.07800, 6954.43800, 172.4, 0.0 ! !END!
6513 ! X = 411.17800, 6954.43800, 172.1, 0.0 ! !END!
6514 ! X = 411.27800, 6954.43800, 171.1, 0.0 ! !END!
6515 ! X = 411.37800, 6954.43800, 170.5, 0.0 ! !END!
6516 ! X = 411.47800, 6954.43800, 169.3, 0.0 ! !END!
6517 ! X = 409.57800, 6954.33800, 176.8, 0.0 ! !END!
6518 ! X = 409.67800, 6954.33800, 177.1, 0.0 ! !END!
6519 ! X = 409.77800, 6954.33800, 176.3, 0.0 ! !END!
6520 ! X = 409.87800, 6954.33800, 174.6, 0.0 ! !END!
6521 ! X = 409.97800, 6954.33800, 173.2, 0.0 ! !END!
6522 ! X = 410.07800, 6954.33800, 170.3, 0.0 ! !END!
6523 ! X = 410.17800, 6954.33800, 168.8, 0.0 ! !END!
6524 ! X = 410.27800, 6954.33800, 165.2, 0.0 ! !END!
6525 ! X = 410.37800, 6954.33800, 162.2, 0.0 ! !END!
6526 ! X = 410.47800, 6954.33800, 157.6, 0.0 ! !END!
6527 ! X = 410.57800, 6954.33800, 157.3, 0.0 ! !END!
6528 ! X = 410.67800, 6954.33800, 161.5, 0.0 ! !END!
6529 ! X = 410.77800, 6954.33800, 164.3, 0.0 ! !END!
6530 ! X = 410.87800, 6954.33800, 168.6, 0.0 ! !END!
6531 ! X = 410.97800, 6954.33800, 170.2, 0.0 ! !END!
6532 ! X = 411.07800, 6954.33800, 170.6, 0.0 ! !END!
6533 ! X = 411.17800, 6954.33800, 170.3, 0.0 ! !END!
6534 ! X = 411.27800, 6954.33800, 167.9, 0.0 ! !END!
6535 ! X = 411.37800, 6954.33800, 167.0, 0.0 ! !END!
6536 ! X = 411.47800, 6954.33800, 166.1, 0.0 ! !END!
6537 ! X = 411.57800, 6954.33800, 166.4, 0.0 ! !END!
6538 ! X = 411.67800, 6954.33800, 167.3, 0.0 ! !END!
6539 ! X = 411.77800, 6954.33800, 167.8, 0.0 ! !END!
6540 ! X = 411.87800, 6954.33800, 167.9, 0.0 ! !END!
6541 ! X = 411.97800, 6954.33800, 167.7, 0.0 ! !END!
6542 ! X = 409.67800, 6954.23800, 178.2, 0.0 ! !END!
6543 ! X = 409.77800, 6954.23800, 178.2, 0.0 ! !END!
6544 ! X = 409.87800, 6954.23800, 174.9, 0.0 ! !END!
6545 ! X = 409.97800, 6954.23800, 174.3, 0.0 ! !END!
6546 ! X = 410.07800, 6954.23800, 169.9, 0.0 ! !END!
6547 ! X = 410.17800, 6954.23800, 168.8, 0.0 ! !END!
6548 ! X = 410.27800, 6954.23800, 162.1, 0.0 ! !END!
6549 ! X = 410.37800, 6954.23800, 160.7, 0.0 ! !END!
6550 ! X = 410.47800, 6954.23800, 154.2, 0.0 ! !END!
6551 ! X = 410.57800, 6954.23800, 154.9, 0.0 ! !END!

6552 ! X = 410.67800, 6954.23800, 162.6, 0.0 ! !END!
6553 ! X = 410.77800, 6954.23800, 164.0, 0.0 ! !END!
6554 ! X = 410.87800, 6954.23800, 170.2, 0.0 ! !END!
6555 ! X = 410.97800, 6954.23800, 170.1, 0.0 ! !END!
6556 ! X = 411.07800, 6954.23800, 170.1, 0.0 ! !END!
6557 ! X = 411.17800, 6954.23800, 168.8, 0.0 ! !END!
6558 ! X = 411.27800, 6954.23800, 164.8, 0.0 ! !END!
6559 ! X = 411.37800, 6954.23800, 164.0, 0.0 ! !END!
6560 ! X = 411.47800, 6954.23800, 163.7, 0.0 ! !END!
6561 ! X = 411.57800, 6954.23800, 163.8, 0.0 ! !END!
6562 ! X = 411.67800, 6954.23800, 165.7, 0.0 ! !END!
6563 ! X = 411.77800, 6954.23800, 165.7, 0.0 ! !END!
6564 ! X = 411.87800, 6954.23800, 165.5, 0.0 ! !END!
6565 ! X = 411.97800, 6954.23800, 165.4, 0.0 ! !END!
6566 ! X = 412.07800, 6954.23800, 167.0, 0.0 ! !END!
6567 ! X = 412.17800, 6954.23800, 164.6, 0.0 ! !END!
6568 ! X = 409.77800, 6954.13800, 180.6, 0.0 ! !END!
6569 ! X = 409.87800, 6954.13800, 179.6, 0.0 ! !END!
6570 ! X = 409.97800, 6954.13800, 177.6, 0.0 ! !END!
6571 ! X = 410.07800, 6954.13800, 173.9, 0.0 ! !END!
6572 ! X = 410.17800, 6954.13800, 171.1, 0.0 ! !END!
6573 ! X = 410.27800, 6954.13800, 165.9, 0.0 ! !END!
6574 ! X = 410.37800, 6954.13800, 162.0, 0.0 ! !END!
6575 ! X = 410.47800, 6954.13800, 155.8, 0.0 ! !END!
6576 ! X = 410.57800, 6954.13800, 156.0, 0.0 ! !END!
6577 ! X = 410.67800, 6954.13800, 159.3, 0.0 ! !END!
6578 ! X = 410.77800, 6954.13800, 162.4, 0.0 ! !END!
6579 ! X = 410.87800, 6954.13800, 165.8, 0.0 ! !END!
6580 ! X = 410.97800, 6954.13800, 166.7, 0.0 ! !END!
6581 ! X = 411.07800, 6954.13800, 165.7, 0.0 ! !END!
6582 ! X = 411.17800, 6954.13800, 164.4, 0.0 ! !END!
6583 ! X = 411.27800, 6954.13800, 161.7, 0.0 ! !END!
6584 ! X = 411.37800, 6954.13800, 160.6, 0.0 ! !END!
6585 ! X = 411.47800, 6954.13800, 160.1, 0.0 ! !END!
6586 ! X = 411.57800, 6954.13800, 161.1, 0.0 ! !END!
6587 ! X = 411.67800, 6954.13800, 164.3, 0.0 ! !END!
6588 ! X = 411.77800, 6954.13800, 164.6, 0.0 ! !END!
6589 ! X = 411.87800, 6954.13800, 163.5, 0.0 ! !END!
6590 ! X = 411.97800, 6954.13800, 163.2, 0.0 ! !END!
6591 ! X = 412.07800, 6954.13800, 161.9, 0.0 ! !END!
6592 ! X = 412.17800, 6954.13800, 159.5, 0.0 ! !END!
6593 ! X = 412.27800, 6954.13800, 154.9, 0.0 ! !END!
6594 ! X = 409.87800, 6954.03800, 181.9, 0.0 ! !END!
6595 ! X = 409.97800, 6954.03800, 180.6, 0.0 ! !END!
6596 ! X = 410.07800, 6954.03800, 175.2, 0.0 ! !END!
6597 ! X = 410.17800, 6954.03800, 173.7, 0.0 ! !END!
6598 ! X = 410.27800, 6954.03800, 167.2, 0.0 ! !END!
6599 ! X = 410.37800, 6954.03800, 164.4, 0.0 ! !END!
6600 ! X = 410.47800, 6954.03800, 153.5, 0.0 ! !END!
6601 ! X = 410.57800, 6954.03800, 153.1, 0.0 ! !END!
6602 ! X = 410.67800, 6954.03800, 158.9, 0.0 ! !END!
6603 ! X = 410.77800, 6954.03800, 159.4, 0.0 ! !END!
6604 ! X = 410.87800, 6954.03800, 164.4, 0.0 ! !END!
6605 ! X = 410.97800, 6954.03800, 163.5, 0.0 ! !END!
6606 ! X = 411.07800, 6954.03800, 162.3, 0.0 ! !END!
6607 ! X = 411.17800, 6954.03800, 160.9, 0.0 ! !END!
6608 ! X = 411.27800, 6954.03800, 158.3, 0.0 ! !END!
6609 ! X = 411.37800, 6954.03800, 157.3, 0.0 ! !END!
6610 ! X = 411.47800, 6954.03800, 156.8, 0.0 ! !END!
6611 ! X = 411.57800, 6954.03800, 157.4, 0.0 ! !END!
6612 ! X = 411.67800, 6954.03800, 164.7, 0.0 ! !END!
6613 ! X = 411.77800, 6954.03800, 163.8, 0.0 ! !END!
6614 ! X = 411.87800, 6954.03800, 161.5, 0.0 ! !END!
6615 ! X = 411.97800, 6954.03800, 160.0, 0.0 ! !END!
6616 ! X = 412.07800, 6954.03800, 158.0, 0.0 ! !END!
6617 ! X = 412.17800, 6954.03800, 157.1, 0.0 ! !END!
6618 ! X = 412.27800, 6954.03800, 154.8, 0.0 ! !END!
6619 ! X = 412.37800, 6954.03800, 152.8, 0.0 ! !END!
6620 ! X = 410.07800, 6953.93800, 176.7, 0.0 ! !END!
6621 ! X = 410.17800, 6953.93800, 174.1, 0.0 ! !END!
6622 ! X = 410.27800, 6953.93800, 169.5, 0.0 ! !END!

6623 ! X = 410.37800, 6953.93800, 164.4, 0.0 ! !END!
6624 ! X = 410.47800, 6953.93800, 155.2, 0.0 ! !END!
6625 ! X = 410.57800, 6953.93800, 153.4, 0.0 ! !END!
6626 ! X = 410.67800, 6953.93800, 153.6, 0.0 ! !END!
6627 ! X = 410.77800, 6953.93800, 155.1, 0.0 ! !END!
6628 ! X = 410.87800, 6953.93800, 155.2, 0.0 ! !END!
6629 ! X = 410.97800, 6953.93800, 155.5, 0.0 ! !END!
6630 ! X = 411.07800, 6953.93800, 154.5, 0.0 ! !END!
6631 ! X = 411.17800, 6953.93800, 153.7, 0.0 ! !END!
6632 ! X = 411.27800, 6953.93800, 152.8, 0.0 ! !END!
6633 ! X = 411.37800, 6953.93800, 152.3, 0.0 ! !END!
6634 ! X = 411.47800, 6953.93800, 152.4, 0.0 ! !END!
6635 ! X = 411.57800, 6953.93800, 153.9, 0.0 ! !END!
6636 ! X = 411.67800, 6953.93800, 155.9, 0.0 ! !END!
6637 ! X = 411.77800, 6953.93800, 156.4, 0.0 ! !END!
6638 ! X = 411.87800, 6953.93800, 154.5, 0.0 ! !END!
6639 ! X = 411.97800, 6953.93800, 153.3, 0.0 ! !END!
6640 ! X = 412.07800, 6953.93800, 152.1, 0.0 ! !END!
6641 ! X = 412.17800, 6953.93800, 151.6, 0.0 ! !END!
6642 ! X = 412.27800, 6953.93800, 151.4, 0.0 ! !END!
6643 ! X = 412.37800, 6953.93800, 149.3, 0.0 ! !END!
6644 ! X = 410.17800, 6953.83800, 175.2, 0.0 ! !END!
6645 ! X = 410.27800, 6953.83800, 170.0, 0.0 ! !END!
6646 ! X = 410.37800, 6953.83800, 166.5, 0.0 ! !END!
6647 ! X = 410.47800, 6953.83800, 151.5, 0.0 ! !END!
6648 ! X = 410.57800, 6953.83800, 150.3, 0.0 ! !END!
6649 ! X = 410.67800, 6953.83800, 151.8, 0.0 ! !END!
6650 ! X = 410.77800, 6953.83800, 152.2, 0.0 ! !END!
6651 ! X = 410.87800, 6953.83800, 150.8, 0.0 ! !END!
6652 ! X = 410.97800, 6953.83800, 151.7, 0.0 ! !END!
6653 ! X = 411.07800, 6953.83800, 150.1, 0.0 ! !END!
6654 ! X = 411.17800, 6953.83800, 150.4, 0.0 ! !END!
6655 ! X = 411.27800, 6953.83800, 148.7, 0.0 ! !END!
6656 ! X = 411.37800, 6953.83800, 148.8, 0.0 ! !END!
6657 ! X = 411.47800, 6953.83800, 149.7, 0.0 ! !END!
6658 ! X = 411.57800, 6953.83800, 149.9, 0.0 ! !END!
6659 ! X = 411.67800, 6953.83800, 152.1, 0.0 ! !END!
6660 ! X = 411.77800, 6953.83800, 151.8, 0.0 ! !END!
6661 ! X = 411.87800, 6953.83800, 149.2, 0.0 ! !END!
6662 ! X = 411.97800, 6953.83800, 148.8, 0.0 ! !END!
6663 ! X = 412.07800, 6953.83800, 147.8, 0.0 ! !END!
6664 ! X = 412.17800, 6953.83800, 147.8, 0.0 ! !END!
6665 ! X = 412.27800, 6953.83800, 149.2, 0.0 ! !END!
6666 ! X = 412.37800, 6953.83800, 148.4, 0.0 ! !END!
6667 ! X = 410.37800, 6953.73800, 163.8, 0.0 ! !END!
6668 ! X = 410.47800, 6953.73800, 153.6, 0.0 ! !END!
6669 ! X = 410.57800, 6953.73800, 150.4, 0.0 ! !END!
6670 ! X = 410.67800, 6953.73800, 150.3, 0.0 ! !END!
6671 ! X = 410.77800, 6953.73800, 151.5, 0.0 ! !END!
6672 ! X = 410.87800, 6953.73800, 155.9, 0.0 ! !END!
6673 ! X = 410.97800, 6953.73800, 156.2, 0.0 ! !END!
6674 ! X = 411.07800, 6953.73800, 155.5, 0.0 ! !END!
6675 ! X = 411.17800, 6953.73800, 153.8, 0.0 ! !END!
6676 ! X = 411.27800, 6953.73800, 148.9, 0.0 ! !END!
6677 ! X = 411.37800, 6953.73800, 147.9, 0.0 ! !END!
6678 ! X = 411.47800, 6953.73800, 146.8, 0.0 ! !END!
6679 ! X = 411.57800, 6953.73800, 147.3, 0.0 ! !END!
6680 ! X = 411.67800, 6953.73800, 147.9, 0.0 ! !END!
6681 ! X = 411.77800, 6953.73800, 147.9, 0.0 ! !END!
6682 ! X = 411.87800, 6953.73800, 147.3, 0.0 ! !END!
6683 ! X = 411.97800, 6953.73800, 146.7, 0.0 ! !END!
6684 ! X = 412.07800, 6953.73800, 145.9, 0.0 ! !END!
6685 ! X = 412.17800, 6953.73800, 145.8, 0.0 ! !END!
6686 ! X = 412.27800, 6953.73800, 145.6, 0.0 ! !END!
6687 ! X = 412.37800, 6953.73800, 145.0, 0.0 ! !END!
6688 ! X = 410.57800, 6953.63800, 149.0, 0.0 ! !END!
6689 ! X = 410.67800, 6953.63800, 148.7, 0.0 ! !END!
6690 ! X = 410.77800, 6953.63800, 151.0, 0.0 ! !END!
6691 ! X = 410.87800, 6953.63800, 161.2, 0.0 ! !END!
6692 ! X = 410.97800, 6953.63800, 162.2, 0.0 ! !END!
6693 ! X = 411.07800, 6953.63800, 160.0, 0.0 ! !END!

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6694 ! X =   411.17800,  6953.63800,  158.6,    0.0 !  !END!
6695 ! X =   411.27800,  6953.63800,  148.0,    0.0 !  !END!
6696 ! X =   411.37800,  6953.63800,  147.4,    0.0 !  !END!
6697 ! X =   411.47800,  6953.63800,  145.1,    0.0 !  !END!
6698 ! X =   411.57800,  6953.63800,  145.3,    0.0 !  !END!
6699 ! X =   411.67800,  6953.63800,  146.1,    0.0 !  !END!
6700 ! X =   411.77800,  6953.63800,  146.2,    0.0 !  !END!
6701 ! X =   411.87800,  6953.63800,  145.9,    0.0 !  !END!
6702 ! X =   411.97800,  6953.63800,  145.4,    0.0 !  !END!
6703 ! X =   412.07800,  6953.63800,  144.5,    0.0 !  !END!
6704 ! X =   412.17800,  6953.63800,  144.0,    0.0 !  !END!
6705 ! X =   412.27800,  6953.63800,  143.5,    0.0 !  !END!
6706 ! X =   410.97800,  6953.53800,  164.9,    0.0 !  !END!
6707 ! X =   411.07800,  6953.53800,  165.8,    0.0 !  !END!
6708 ! X =   411.17800,  6953.53800,  162.9,    0.0 !  !END!
6709 ! X =   411.27800,  6953.53800,  157.2,    0.0 !  !END!
6710 ! X =   411.37800,  6953.53800,  153.4,    0.0 !  !END!
6711 ! X =   411.47800,  6953.53800,  148.1,    0.0 !  !END!
6712 ! X =   411.57800,  6953.53800,  147.0,    0.0 !  !END!
6713 ! X =   411.67800,  6953.53800,  145.8,    0.0 !  !END!
6714 ! X =   411.77800,  6953.53800,  145.5,    0.0 !  !END!
6715 ! X =   411.87800,  6953.53800,  144.0,    0.0 !  !END!
6716 ! X =   411.97800,  6953.53800,  143.4,    0.0 !  !END!
6717 ! X =   412.07800,  6953.53800,  142.0,    0.0 !  !END!
6718 ! X =   412.17800,  6953.53800,  141.6,    0.0 !  !END!
6719 ! X =   412.27800,  6953.53800,  141.0,    0.0 !  !END!
6720 ! X =   411.47800,  6953.43800,  148.0,    0.0 !  !END!
6721 ! X =   411.57800,  6953.43800,  146.9,    0.0 !  !END!
6722 ! X =   411.67800,  6953.43800,  146.0,    0.0 !  !END!
6723 ! X =   411.77800,  6953.43800,  145.5,    0.0 !  !END!
6724 ! X =   411.87800,  6953.43800,  142.8,    0.0 !  !END!
6725 ! X =   411.97800,  6953.43800,  142.5,    0.0 !  !END!
6726 ! X =   412.07800,  6953.43800,  140.2,    0.0 !  !END!
6727 ! X =   412.17800,  6953.43800,  140.4,    0.0 !  !END!
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a

Data for each receptor are treated as a separate input subgroup and therefore must end with an input group terminator.

b

Receptor height above ground is optional. If no value is entered, the receptor is placed on the ground.

c

Receptors can be assigned using group names provided in 17b. If no group names are used (NRGRP=0) then the default assignment name X must be used.

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