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1. INTRODUCTION

1.1 Background

Port Hedland Iron Pty Ltd (PHI) are evaluating the feasibility of developing a large-scale downstream processing capability at the Boodarie Strategic Industrial Area (BSIA) in Port Hedland, Western Australia, sourcing magnetite concentrate from iron ore operations in the Pilbara to produce Hot Briquetted Iron (HBI) for export to customers who will convert the HBI into a low carbon emission steel overseas. The project is called the Port Hedland Iron Project (Project). PHI have commissioned Preston Consulting to engage and contract all relevant environmental studies.

PHI plan to seek approval under Part IV of the Environmental Protection Act 1986 (EP Act) to enable the development of the Project. An air quality modelling assessment is required for the project and the Environmental Impact Assessment (EIA) process.

1.2 Purpose of this Report

This report presents the assessment of the potential air quality impacts arising from atmospheric emissions from the Project and the comparison against recognised Australian air quality standards. The following compounds have been considered in the air dispersion modelling assessment:

- Oxides of nitrogen (NO_x), including nitrogen dioxide (NO₂);
- Sulphur dioxide (SO₂);
- Carbon monoxide (CO);
- Hydrogen sulphide (H₂S); and
- Ammonia (NH₃)

The approach, methodology and results of the predicted impacts are outlined in the following sections.

1.3 Site Description

The Project site is located within the Boodarie Strategic Industrial Area (BSIA), approximately 7 km from the Town of South Hedland and approximately 10 km south-west of Port Hedland in the Pilbara region Figure 1. The area surrounding the site of the Project is predominantly flat with sparse vegetation. The nearest residences to the site of the proposed Project are the South Hedland Rural Estate (Boodarie locality), Town of South Hedland and Boodarie Homestead.

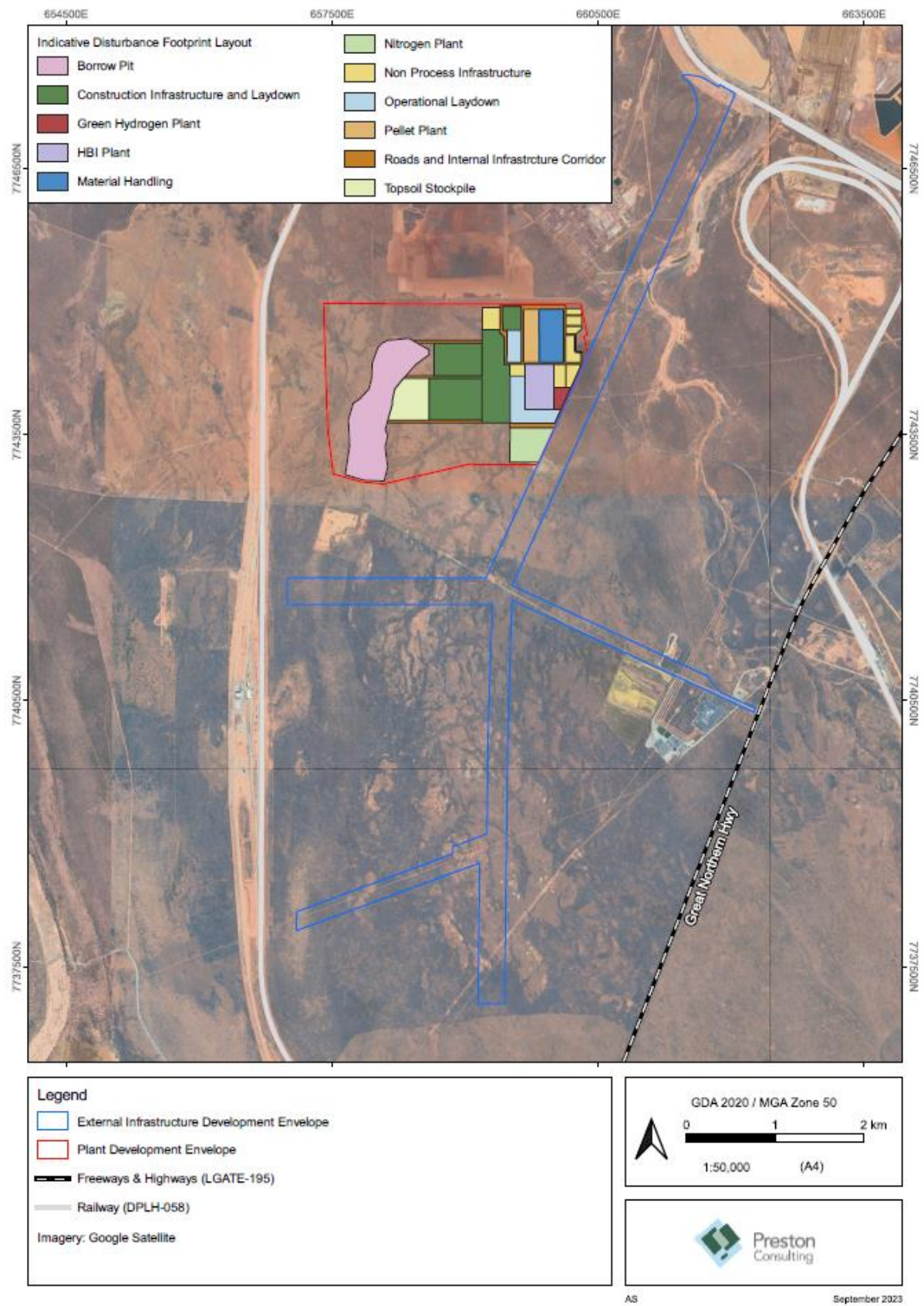


Figure 1: Project layout of Port Hedland Iron Project

1.4 Project Description

The Project will be developed in stages. Stage 1 of the Project will develop the Iron Ore Processing Facility consisting of a Pellet Plant which will utilise approximately 3 - 3.5 million tonnes per annum (Mtpa) of iron ore (trucked in from iron ore operations in the Pilbara) and a HBI Plant which will further process approximately 2 Mtpa of the pellets into HBI (Stage 1). The disturbance footprint for Stage 1 of the Project will likely be around 300 – 400 hectares (ha) within the BSIA. A conceptual project layout for Stage 1 of the Project (Project Area) is detailed in Figure 2 (yellow outline).

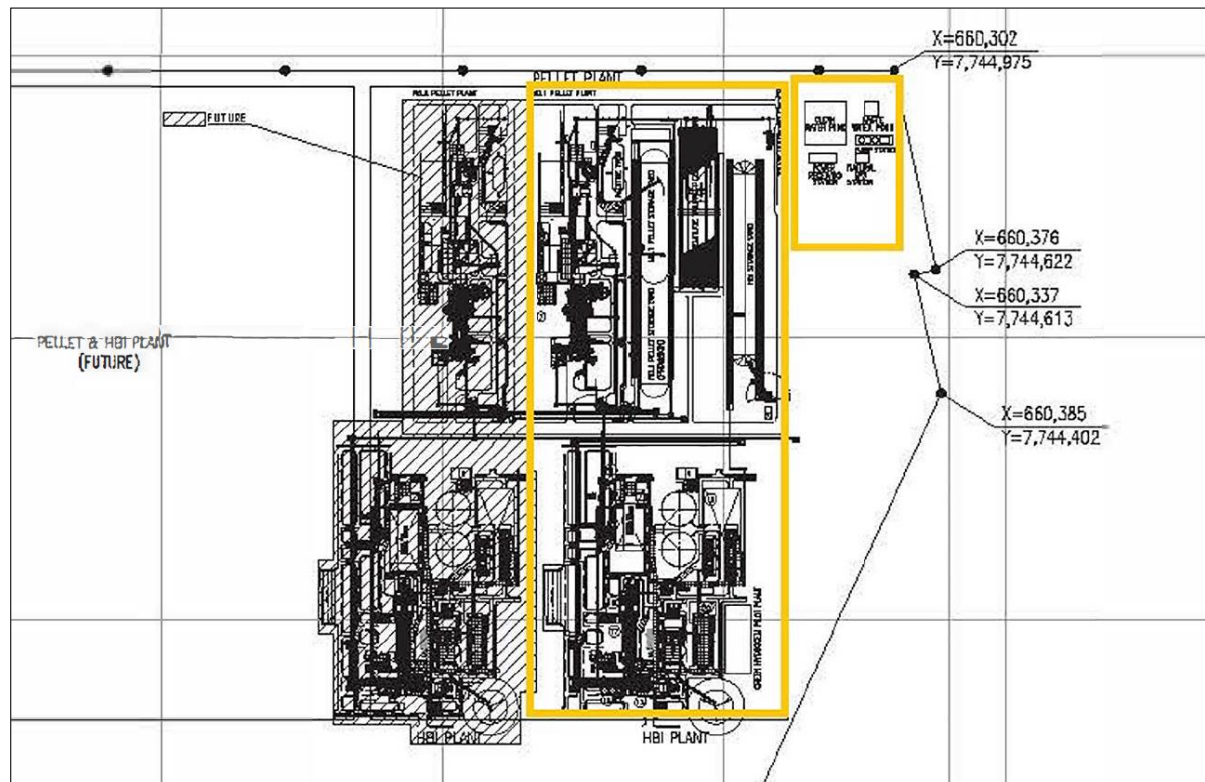


Figure 2: Conceptual project layout for Stage 1

2. EXISTING ENVIRONMENT

2.1 Regional Climate

The Port Hedland climate is a semi-desert tropical climate. Weather patterns are characterised by extremes in both temperature and rainfall. Tropical cyclonic activity generally occurs between November and March, although tropical cyclones can occur outside of this period (New Energy, 2012).

Local meteorological conditions at the site are influenced by coastal wind patterns, tropical cyclonic activity, and the low surface roughness of the surrounding environment. Winds are variable seasonally in direction and strength. The windiest conditions are experienced in summer, with winds generally prevailing from the north-west. West and north-westerly winds are dominant in summer, spring and most of autumn. In general, westerly winds are dominant in the morning, shifting to north-westerly in the afternoon, with an accompanying increase in speed. In winter, east to south-easterly winds are dominant in the mornings and shift to north-easterlies in the afternoon before easing in the evening in response to diurnal land temperature changes (New Energy, 2012).

Regional climate information was also obtained from the nearest Bureau of Meteorology (the Bureau) monitoring station to the site, Port Hedland Airport, for which the data shows that during the summer months (December to February) the maximum average temperatures can regularly reach upwards of 36°C and during the winter months (June to August) the minimum average temperatures can be as low as 12.5°C. The average maximum and minimum temperature plots can be seen below in Figure 3 and Figure 4 respectively.

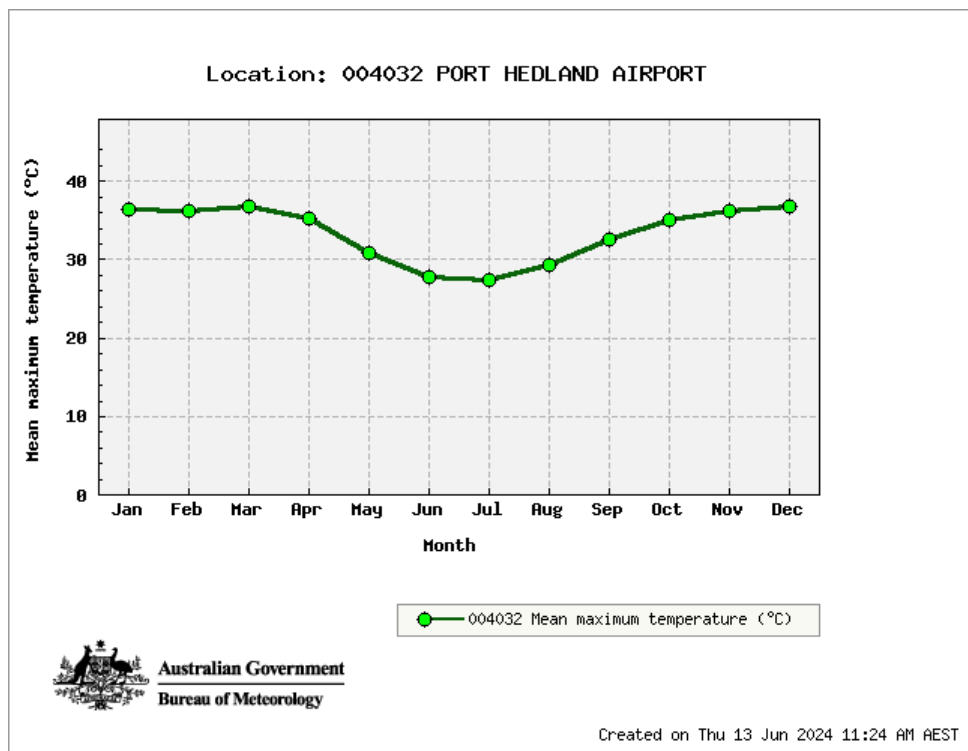


Figure 3: Mean Maximum Temperature Recorded at the Bureau Monitoring Site – Port Hedland Airport (1948 - 2024)

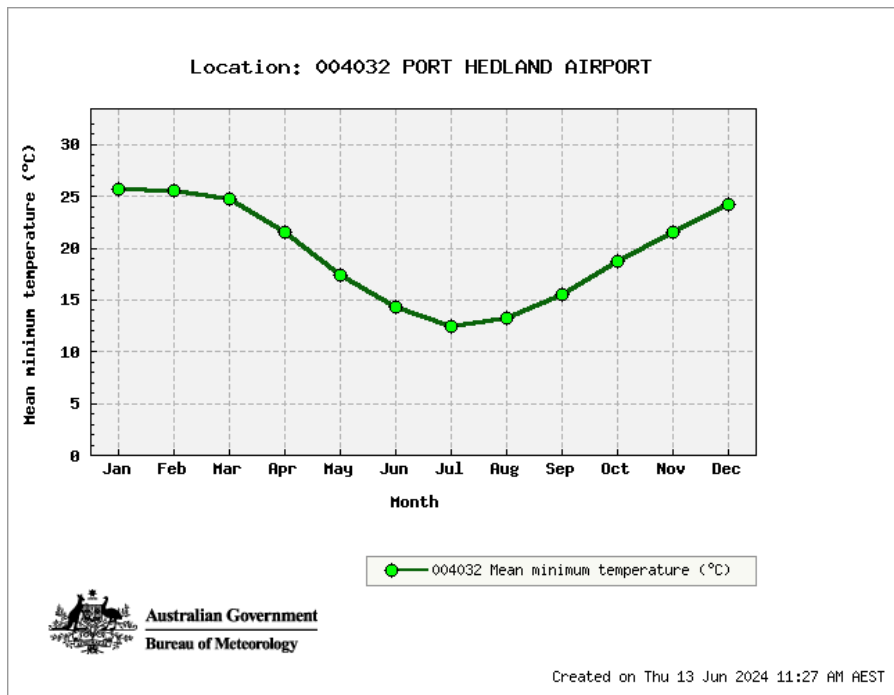


Figure 4: Mean Minimum Temperature Recorded at the Bureau Monitoring Site – Port Hedland Airport (1948 - 2024)

The annual average rainfall at the nearest meteorological station is 314 millimetres. The majority of the rainfall within the region occurs between December and March, and the remaining period September to November is usually dry with hot and sunny conditions (Figure 5).

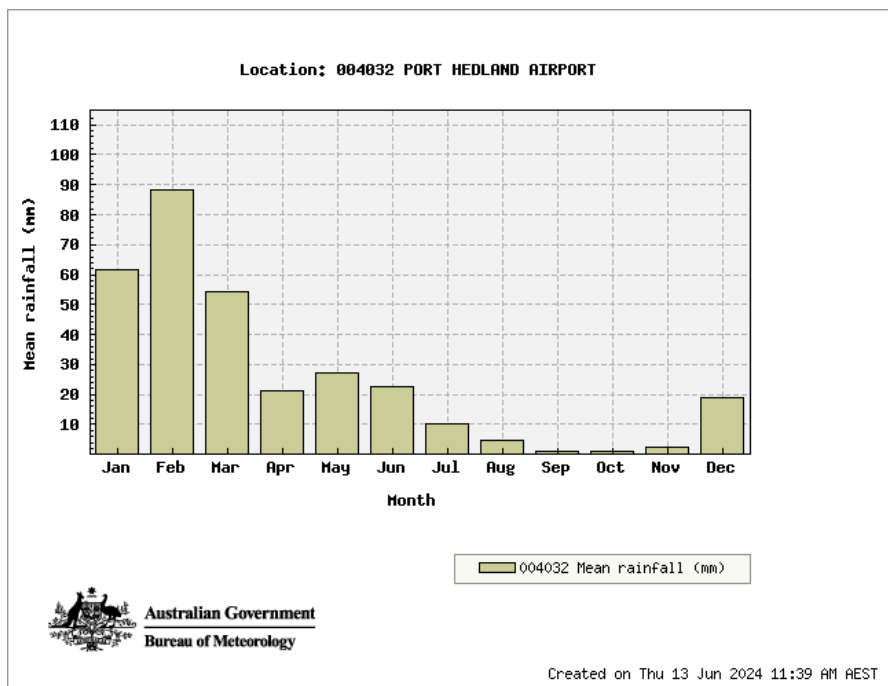


Figure 5: Mean Rainfall at the Bureau Monitoring Station – Port Hedland Airport (1948 - 2024)

3. AMBIENT AIR QUALITY

3.1 Air Quality Criteria

The predicted ground level concentrations (GLCs) for each of the modelled scenarios was compared with the relevant ambient air quality criteria which included consideration to relevant guidance namely the Air Quality Modelling Guidance Notes (Department of Environment, March 2006), the draft Guideline: Air Emissions (DWER, October 2019) and the National Environment Protection Measures (NEPMs).

It should be noted that on the 18th of May 2021, the National Environment Protection Council (NEPC) modified ambient standards for several pollutants, based on international guidance (NEPC, 2021). Relevant changes to the standards impacting the reporting of NO₂ include significantly strengthening NO₂ reporting standards for 1-hour and annual average NO₂ to 80 ppb and 15 ppb respectively. Similarly, the standards for sulfur dioxide (SO₂) were revised, lowering the 24-hour average limits to 20 ppb, and the 1-hour standard is further tightened to 75 ppb in 2025. The criteria included in this assessment are presented in Table 1.

Table 1: Ambient Air Quality Guideline values

Pollutant	Averaging Period	Guideline (µg/m ³) ¹	Reference
Carbon monoxide (CO)	1-hour	30,000	DWER (2019)
	8-Hours	10,000	NEPC (2021)
Nitrogen Dioxide (NO ₂)	1-hour	151	NEPC (2021)
	Annual	28	NEPC (2021)
Sulfur Dioxide (SO ₂)	1-hour	196	NEPC (2025)
	24-hour	52	NEPC (2021)
	Annual	52	DWER (2019)
Hydrogen Sulphide (H ₂ S)	1-hour	2,800	DWER (2019)
	24-hour	150	DWER (2019)
	Annual	2	DWER (2019)
Ammonia (NH ₃)	1-hour	330	DWER (2019)

Notes

1. Referenced to 25°C, and 101.3 kPa.

3.2 Existing air quality

A representative background concentration of pollutants nitrogen dioxide (NO₂) and sulphur dioxide (SO₂) in the Port Hedland region was required to assess potential cumulative impacts for the purposes of this study.

No specific guidance for selection of an appropriate background level is provided in Western Australia. Accordingly, in Victoria, the State Environment Protection Policy (Ambient Air Quality) (SEPP (AQM)) (EPA VIC, 2001) states that the 70th percentile concentration (concentration which is exceeded by 30% of concentrations for that averaging period) should be adopted as the background level.

The Port Hedland Industries Council (PHIC) has established a network of ambient air quality monitoring stations around the Port Hedland area. The network has been established to ensure that dust generated by port and industry operations does not adversely impact the Port Hedland community. The focus of the monitoring network is therefore on the measurement of particulates, however ambient NO₂ and SO₂ are being monitored at a number of locations to determine the relative change in the ambient concentration of these pollutants over time.

Live and historical data is available on Port Hedland air quality monitoring network website. The Taplin St station data provided the five-minute average concentration of the relevant background air quality data. The 70th percentile 1-hour and 24-hour average as well as the annual average concentrations for the pollutants of interest were obtained and are presented in Table 2.

Table 2: Background Monitoring Concentrations – Port Hedland (Taplin St monitoring station)

Compound	Averaging Period	Concentration ($\mu\text{g}/\text{m}^3$) ¹
SO ₂	70 th Percentile 1-hour	2.6
	70 th Percentile 24-hour	2.6
	Annual Average	2.5
CO	70 th Percentile 1-hour	154
	70 th Percentile 8-hour	155
NO ₂	70 th Percentile 1-hour	33.2
	Annual Average	12.2

Notes

1. Referenced to 25°C, and 101.3 kPa.

4. AIR DISPERSION MODELLING AND METHODOLOGY

4.1 Air Dispersion Model

The air dispersion modelling was conducted using AERMOD (version 22112) which is a steady-state Gaussian (plume) model and is the recommended regulatory model for short range (<50 km) dispersion in the United States. AERMOD is used in widely in Australia for regulatory approvals applications and is accepted for use by the Department of Water and Environment Regulation (DWER). AERMOD is a current-generation air dispersion model that incorporates concepts such as planetary boundary layer theory and advanced methods for handling complex terrain. The utilization of AERMOD is consistent with the considerations of EIA outlined in the EPAs Environmental Factor Guideline for Air Quality (EPA, 2020).

4.2 Meteorological Data

A model ready meteorological dataset based on the PHIC Cumulative Air Model was provided by the PHIC was used for input into AERMOD. The annual average wind rose derived from the Port Hedland Airport meteorological dataset (2013) is presented as Figure 6.

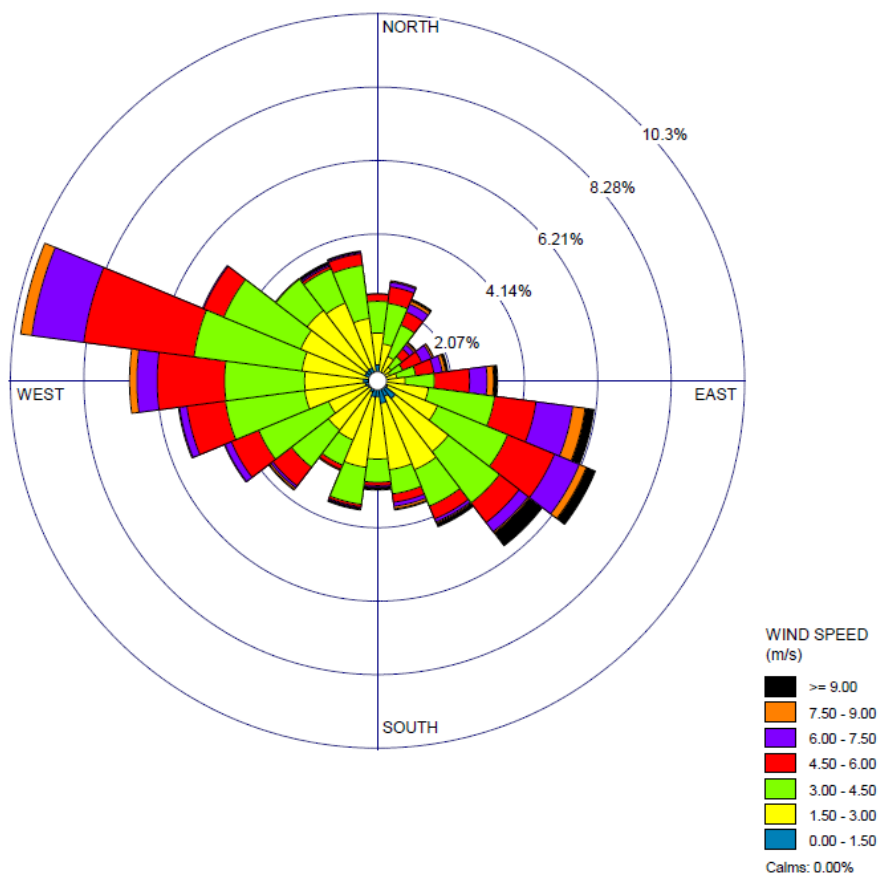


Figure 6: Windrose for Port Hedland Airport

4.3 Model Parameterisation

4.3.1 AERMOD

A summary of the receptor grid for air dispersion modelling is presented in Table 3. In addition to the grid, 10 discrete receptor locations, representing the sensitive receptor locations were also included.

Table 3: AERMOD Grid Receptor Parameters

Parameter	Grid
Dimensions	13 km x 10 km
Spacing	200 m
SW Easting ¹ (mE)	656,500
SW Northing ¹ (mN)	7,738,500
No. of Points	65 x 50

Notes

1. MGA94

Terrain elevation data for the model domain were obtained from the US National Aeronautics and Space Administration's (NASA) Shuttle Radar Topography Mission (SRTM3/SRTM1) and incorporated into AERMOD using the AERMAP terrain processor. Samples of the AERMOD input files are included as Appendix 1.

4.3.1.1 Building Wake Effects

Building wake effects were incorporated into AERMOD using the Building Profile Input Program (BPiP) – Plume Rise Model Enhancements (PRIME) building algorithm. The locations and dimensions of buildings that have the potential to influence plume dispersion were supplied in the form of facility drawings by PHI.

4.3.2 Receptor Locations

In addition to the gridded receptors for AERMOD, discrete receptors were positioned throughout the modelled domain to represent residential dwellings and recreational locations. These discrete receptors are summarised in Table 4 and shown in Figure 7.

Table 4: Discrete Receptor Locations

ID	Receptor	Easting (MGA94) (m)	Northing (MGA94) (m)
R1	Quartz Quarry Road, South Hedland Rural Estate	666,130	7,738,865
R2	Port Hedland Golf Club	664,308	7,743,142
R3	Wedgefield	665,655	7,745,537
R4	South Hedland Sports Complex	666,364	7,743,109
R5	Scadden Rd, South Hedland	666,298	7,742,616
R6	Colebatch Way, South Hedland	666,105	7,741,983
R7	Wambiri St, South Hedland	666,985	7,741,465
R8	Steamer Ave, South Hedland	667,325	7,740,973
R9	Cottier Dr (roundabout), South Hedland	667,487	7,742,749
R10	Parker St, South Hedland	666,900	7,744,025



Figure 7: Receptors location.

4.4 Emission Estimates and Stack Parameters

A summary of the stack parameters and gaseous emissions data from the PHI Project sources that were included in the modelling assessment is presented in Table 5. The physical stack parameters, exhaust characteristics and emission estimates for each emissions source were provided by PHI.

Table 5: Summary of Port Hedland Iron Source Parameters

Parameter	Unit	Emission Point										
		Flue Gas Stack	Bottom seal gas dedusting	Briquette dedusting	Oxide screening dedusting	Vent pipe / stack	Degasser - Top Gas Weir Drain	Degasser – Top Gas Cone Drain	Degassing unit Process Water Clean	Cooling Towers for Clean Proc. Water	Oxide Coating Bin Vent Filter	Pellet Plant Main Exhaust Stack
Emission point	ID	E01	E03	E04	E05	E07	E08	E09	E10	E12	E13	SK-551
Location	mE	659,818	659,907	659,907	659,751	659,820	659,884	659,874	659,857	659,998	659,760	659,791
	mN	7,744,095	7,743,899	7,743,893	7,744,209	7,743,894	7,744,163	7,744,163	7,744,216	7,744,124	7,744,153	7,744,449
Stack height	m	60.0	30.0	30.0	30.0	137.2	20.0	20.0	17.5	12.0	20.0	50.0
Chimney mouth diameter	m	4.3	1.7	1.4	1.0	1.4	0.9	0.3	0.4	6.1	0.3	4.9
Stack flow rate	m ³ /s	271.0	21.0	31.0	15.7	30.2	18.7	2.1	2.9	318.0	0.6	358.9
Stack temperature	°C	358.0	56.0	30.0	35.0	98.0	80.0	80.0	40.0	40.0	25.0	101.0
Stack exit velocity	m/s	18.1	9.4	20.0	20.3	19.0	29.3	29.3	23.2	10.9	9.2	19.4
Pollutant Emission Rate (g/s)												
CO		5.6	61.8	70.1	-	57.1	16.1	1.8	5.2	-	-	-
NO_x (as NO₂)		10.6	0.1	0.5	-	-	-	-	-	-	-	7.9
SO₂		0.9	0.0	0.0	-	-	-	-	-	-	-	17.0
NH₃		-	0.1	0.6	-	0.51	0.29	0.03	0.013	2.9	-	0.5
H₂S		-	-	-	-	-	0.07	0.008	0.013	-	-	-

4.5 Other Emission Estimates and Stack Parameters

The cumulative impact due to background pollutant levels and other emission sources in the region needs to be taken into account to enable an assessment of overall compliance with the ambient criteria.

The approved and existing NO_x and CO gaseous emission sources in the region are included into the assessment to calculate the cumulative NO_x and CO concentrations as they are major sources of NO_x and CO gaseous emissions (Figure 8). These sources are South Hedland Power Station (existing), Port Hedland Power Station (existing), and New Energy Boodarie Waste to Energy (WTE) and Materials Recovery Facility (This has been approved but not built yet). The emissions information and stack release parameters used as inputs to the modelling are presented in Table 6.

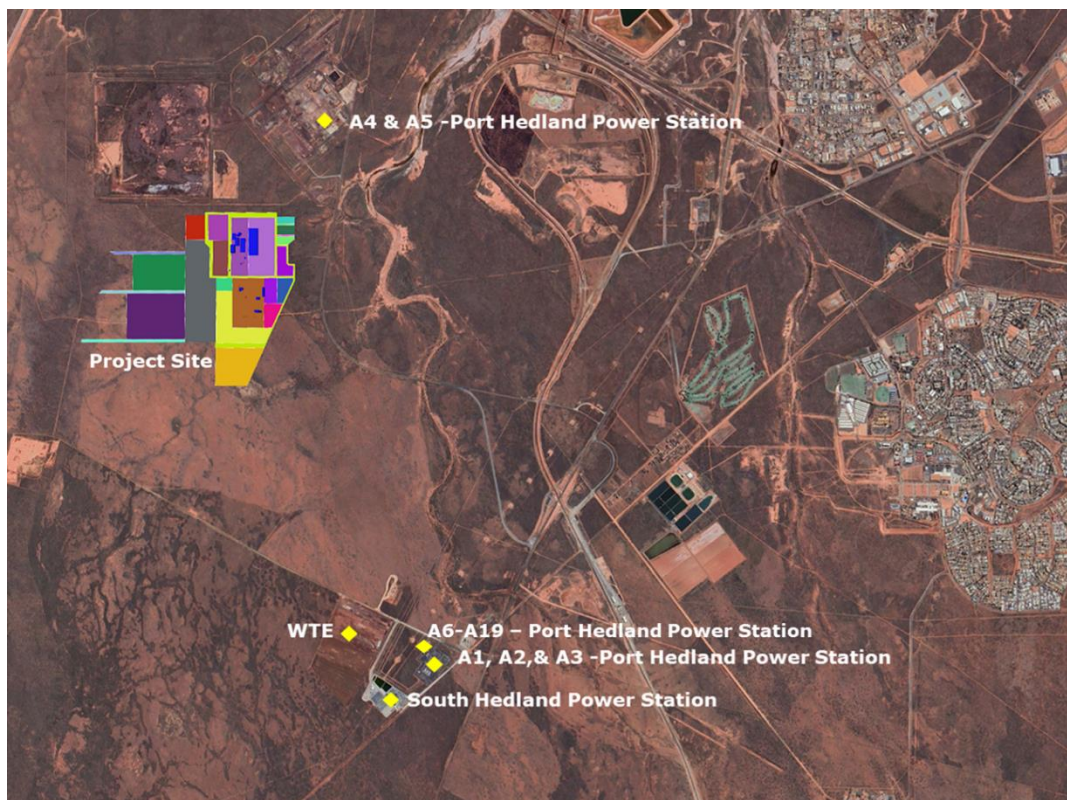


Figure 8: Project site and other emission sources.

TransAlta built, owns and operates South Hedland Power Station power station in the Pilbara region of Western Australia. This is 150-megawatt (MW) power station, generated by two Combined Cycle Gas Turbines (CCGT) units (108 MW combined), and one Open Cycle Gas Turbines (OCGT) unit (42 MW). The emissions information and stack release parameters for these sources has been sourced from previous air dispersion modelling reports (Alinta, 2021).

Alinta operates the Port Hedland Power Station, which is comprised of three 30 MW gas turbines (A1- A3), two 30 MW gas turbines (A4 - A5) and fourteen (A6-A19) gas reciprocating engines. The emissions information and stack release parameters sources has been sourced from previous air dispersion modelling reports (Alinta, 2021) and technical specification documentation (Jenbacher, 2025).

New Energy has environmental regulatory approval for the Boodarie Waste to Energy and Materials Recovery Facility proposed to be located on a site adjacent to the South Hedland Power Station power station premises boundary. The emissions information and stack release parameters for this facility has been sourced from the Air Quality Impact Assessment report (ENVIRON, 2014).

Table 6: Summary of other Emission Source Parameters

Emission Point	Emission point	Location		Stack ht.	Stack dia.	Stack temp.	Exit velocity	NO _x (as NO ₂) Emission Rate	CO Emission Rate
	ID	mE	mN	m	m	°C	m/s	g/s	g/s
South Hedland Power Station	OC1	661307	7740080	25	3.16	503	21.3	30.3	0.32
	CC1	661337	7740065	35	3.16	503	21.3	30.3	0.2
	CC2	661361	7740041	35	3.16	503	21.3	30.3	0.2
Port Hedland Power Station	A1	661652	7740278	14.6	3.51	501	27.6	20.81	0.26
	A2	661674	7740261	14.6	3.51	530	27.6	25.72	0.28
	A3	661696	7740245	14.6	3.51	531	27.6	27.34	18.5
	A4	660573	7745893	15	3.72	520	16.9	2	18.5
	A5	660579	7745886	15	3.72	427	21.5	15	18.5
	A6	661623	7740434	14	0.6	362	44.8	0.92	5.0
	A7	661630	7740433	14	0.6	362	44.8	0.92	5.0
	A8	661637	7740432	14	0.6	362	44.8	0.92	5.0
	A9	661644	7740431	14	0.6	362	44.8	0.92	5.0
	A10	661651	7740430	14	0.6	362	44.8	0.92	5.0
	A11	661658	7740429	14	0.6	362	44.8	0.92	5.0
	A12	661665	7740428	14	0.6	362	44.8	0.92	5.0
	A13	661672	7740427	14	0.6	362	44.8	0.92	5.0
	A14	661679	7740426	14	0.6	362	44.8	0.92	5.0
	A15	661686	7740425	14	0.6	362	44.8	0.92	5.0
	A16	661693	7740424	14	0.6	362	44.8	0.92	5.0
	A17	661700	7740423	14	0.6	362	44.8	0.92	5.0
	A18	661707	7740422	14	0.6	362	44.8	0.92	5.0
	A19	661714	7740421	14	0.6	362	44.8	0.92	5.0
WTE	WTE	660600	7740800	30	2.5	164.85	17.9	2.68	0

4.6 Treatment of Oxides of Nitrogen

Ramboll has applied the Ozone Limiting Method (OLM) to predict ground level concentrations of NO₂ as specified by the USEPA (see Cole and Summerhays 1979; Tikvart 1996) and NSW Environment Protection Authority (NSW EPA, 2016). This method assumes that all the available ozone in the atmosphere will react with nitrogen oxide (NO) in the plume until either all the available ozone or all the NO is used up. This approach is conservative in that it assumes that the atmospheric reaction is instant when in reality, the reaction takes place over a number of hours.

In the absence of ozone monitoring data, regional ozone concentrations were obtained from the CAMS global reanalysis (Copernicus, 2020) dataset for the 2023 year. Reanalysis combines model data with observations from across the world into a globally complete and consistent dataset.

5. MODELLING RESULTS

5.1 The Project in isolation

The maximum GLCs across the model domain and at the nominated receptor locations have been predicted for the proposed Project. The maximum predicted average concentrations (in isolation and cumulatively) at sensitive receptor locations for each pollutant of concern was compared against their respective ambient air quality criteria and are presented in Table 8 to Table 11.

The results of the modelling indicate that the air quality impacts due to emissions from the Project in isolation are predicted to be well below the relevant ambient criteria at the receptor locations. No exceedances were predicted at any of the sensitive receptors for the compounds of interest.

5.2 Cumulative Impact Assessment

Where ambient monitoring data is available for the compounds of interest, this has been used to determine the cumulative impacts of the Project at the sensitive receptor locations.

Background monitoring data was available for NO₂, CO and SO₂. The cumulative impact of NO_x and CO emissions from the Project and other sources and other approved sources within the region have been evaluated using air dispersion modelling results. Ambient monitoring data available for CO and NO₂ has been used, together with model predictions, to determine the cumulative impacts of the Project at the receptor locations. For SO₂, only the background data was used to calculate the cumulative impacts as there are no other known significant point sources of SO₂ in the region.

Table 7 presents the cumulative maximum 1-hour average and annual average NO₂ GLCs at the receptor locations. No exceedances of the maximum 1-hour average and annual average NO₂ guideline were predicted. The maximum predicted cumulative 1-hour average GLCs at sensitive receptor (R3) for NO₂ was 100.2 µg/m³ (66.4% of the 1-hour NO₂ ambient air quality guideline). The maximum predicted cumulative annual average GLCs at sensitive receptor (R1) for NO₂ was 14 µg/m³, which was 50.2% of the ambient air quality guideline.

Model predictions indicate that the GLCs of NO₂ at the receptor locations will increase marginally due to emissions from the proposed Project. The increase in the maximum 1-hour average GLCs of NO₂ at receptor locations is predicted to be less than 6.5 µg/m³. This increase is not considered to be significant when compared to existing air quality and the relevant ambient air quality criteria.

Table 8 presents cumulative maximum 1-hour average and annual average CO GLCs at the receptor locations. No exceedances of the CO short-term (1-hour) or mid-term (8-hour) averaging period guidelines were predicted. The maximum predicted cumulative 1-hour average GLCs at sensitive receptor (R3) for CO was 835.5 µg/m³ (2.8 % of the 1-hour CO ambient air quality guideline). The maximum predicted 8-hour average GLCs at sensitive receptor (R2) for CO was 516.6 µg/m³, which was 5.2% of the ambient air quality guideline.

Table 9 presents the cumulative maximum 1-hour average, 24-hour average and annual average SO₂ GLCs at the receptor locations. No exceedances of the SO₂ 1-hour, 24 -hour average and annual averaging period guidelines were predicted. Model predictions indicate that the GLCs of SO₂ at the receptor locations will increase marginally due to emissions from the proposed Project.

Contour plots of the cumulative predicted NO₂, SO₂ and CO GLCs are in presented in Figure 9 to Figure 15.

Table 7: Predicted NO₂ – GLCs for 1-hr and Annual Averaging Periods at Receptors

NO ₂ - 1 hr Averaging period							
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation		Maximum Predicted GLCs with Existing Sources	Background (µg/m ³) ²	Cumulative Maximum Predicted GLCs	
		AERMOD (µg/m ³)	% of Guideline			AERMOD (µg/m ³)	% of Guideline
R1	151	6.2	4.1%	52.2	33	85.4	56.6%
R2	151	4.8	3.2%	58.9	33	92.1	61.0%
R3	151	5.0	3.3%	67.0	33	100.2	66.4%
R4	151	4.7	3.1%	64.2	33	97.4	64.5%
R5	151	4.7	3.1%	64.9	33	98.1	65.0%
R6	151	5.2	3.5%	62.4	33	95.6	63.3%
R7	151	4.9	3.3%	54.5	33	87.7	58.1%
R8	151	5.3	3.5%	52.1	33	85.3	56.5%
R9	151	4.4	2.9%	60.6	33	93.8	62.1%
R10	151	5.7	3.8%	64.2	33	97.4	64.5%
NO ₂ - Annual Averaging period							
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation		Maximum Predicted GLCs with Existing Sources	Background (µg/m ³) ²	Cumulative Maximum Predicted GLCs	
		AERMOD (µg/m ³)	% of Guideline			AERMOD (µg/m ³)	% of Guideline
R1	28.0	0.1	0.3%	1.9	12.2	14.0	50.2%
R2	28.0	0.2	0.8%	1.4	12.2	13.6	48.6%
R3	28.0	0.1	0.3%	1.0	12.2	13.1	46.9%
R4	28.0	0.1	0.5%	1.3	12.2	13.5	48.1%
R5	28.0	0.1	0.5%	1.4	12.2	13.6	48.5%
R6	28.0	0.1	0.5%	1.5	12.2	13.7	48.8%
R7	28.0	0.1	0.4%	1.4	12.2	13.6	48.5%
R8	28.0	0.1	0.4%	1.4	12.2	13.5	48.4%
R9	28.0	0.1	0.4%	1.3	12.2	13.5	48.2%
R10	28.0	0.1	0.4%	1.1	12.2	13.3	47.3%

Note:

1. All values referenced at 25°C and 1 atm.

Table 8: Predicted CO – GLCs for 1-hr and 8-hur Averaging Periods at Receptors

CO - 1 hr Averaging period							
Receptor	Guideline ($\mu\text{g}/\text{m}^3$)	Maximum Predicted GLCs in Isolation		Maximum Predicted GLCs with Existing Sources	Background ($\mu\text{g}/\text{m}^3$) ²	Cumulative Maximum Predicted GLCs	
		AERMOD ($\mu\text{g}/\text{m}^3$)	% of Guideline			AERMOD ($\mu\text{g}/\text{m}^3$)	% of Guideline
R1	30,000	391.4	1.3%	391.4	154.0	545.4	1.8%
R2	30,000	636.0	2.1%	636.0	154.0	790.0	2.6%
R3	30,000	681.5	2.3%	681.5	154.0	835.5	2.8%
R4	30,000	606.3	2.0%	606.4	154.0	760.4	2.5%
R5	30,000	632.3	2.1%	632.3	154.0	786.3	2.6%
R6	30,000	573.1	1.9%	573.1	154.0	727.1	2.4%
R7	30,000	605.2	2.0%	605.2	154.0	759.2	2.5%
R8	30,000	582.1	1.9%	582.1	154.0	736.1	2.5%
R9	30,000	487.7	1.6%	487.8	154.0	641.8	2.1%
R10	30,000	622.6	2.1%	622.6	154.0	776.6	2.6%
CO - 8 hr Averaging period							
Receptor	Guideline ($\mu\text{g}/\text{m}^3$)	Maximum Predicted GLCs in Isolation		Maximum Predicted GLCs with Existing Sources	Background ($\mu\text{g}/\text{m}^3$) ²	Cumulative Maximum Predicted GLCs	
		AERMOD ($\mu\text{g}/\text{m}^3$)	% of Guideline			AERMOD ($\mu\text{g}/\text{m}^3$)	% of Guideline
R1	10,000	69	0.7%	69.3	155.5	224.8	2.2%
R2	10,000	361	3.6%	361.0	155.5	224.8	2.2%
R3	10,000	172	1.7%	171.8	155.5	224.8	2.2%
R4	10,000	219	2.2%	218.7	155.5	224.8	2.2%
R5	10,000	313	3.1%	313.5	155.5	224.8	2.2%
R6	10,000	173	1.7%	173.2	155.5	224.8	2.2%
R7	10,000	165	1.8%	176.2	155.5	224.8	2.2%
R8	10,000	145	1.5%	145.9	155.5	224.8	2.2%
R9	10,000	258	2.6%	258.1	155.5	224.8	2.2%
R10	10,000	219	2.2%	218.9	155.5	224.8	2.2%

Note:

1. All values referenced at 25°C and 1 atm.

Table 9: Predicted SO₂ – GLCs for 1-hr, 24-hr and Annual Averaging Periods at Receptors

SO ₂ - 1 hr Averaging period						
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation		Background (µg/m ³) ²	Cumulative Maximum Predicted GLCs	
		AERMOD (µg/m ³)	% of Guideline		AERMOD (µg/m ³)	% of Guideline
R1	196	6.3	3.2%	2.6	8.9	4.5%
R2	196	5.4	2.7%	2.6	8.0	4.1%
R3	196	5.1	2.6%	2.6	7.7	3.9%
R4	196	4.8	2.5%	2.6	7.4	3.8%
R5	196	5.0	2.5%	2.6	7.6	3.9%
R6	196	5.7	2.9%	2.6	8.3	4.3%
R7	196	5.3	2.7%	2.6	7.9	4.0%
R8	196	5.6	2.8%	2.6	8.2	4.2%
R9	196	4.5	2.3%	2.6	7.1	3.6%
R10	196	5.6	2.8%	2.6	8.2	4.2%
SO ₂ - 24 hr Averaging period						
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation		Background (µg/m ³) ²	Cumulative Maximum Predicted GLCs	
		AERMOD (µg/m ³)	% of Guideline		AERMOD (µg/m ³)	% of Guideline
R1	52	3.4	6.5%	2.6	6.0	11.5%
R2	52	3.0	5.7%	2.6	5.6	10.7%
R3	52	2.4	4.6%	2.6	5.0	9.6%
R4	52	3.0	5.8%	2.6	5.6	10.8%
R5	52	3.3	6.4%	2.6	5.9	11.4%
R6	52	2.6	5.0%	2.6	5.2	10.0%
R7	52	3.0	5.8%	2.6	5.6	10.8%
R8	52	2.8	5.4%	2.6	5.4	10.4%
R9	52	2.7	5.1%	2.6	5.3	10.1%
R10	52	2.7	5.1%	2.6	5.3	10.1%
SO ₂ - Annual Average						
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation		Background (µg/m ³) ²	Cumulative Maximum Predicted GLCs	
		AERMOD (µg/m ³)	% of Guideline		AERMOD (µg/m ³)	% of Guideline
R1	52	0.1	0.2%	2.5	2.6	5.0%
R2	52	0.2	0.3%	2.5	2.7	5.1%
R3	52	0.1	0.1%	2.5	2.6	4.9%
R4	52	0.1	0.2%	2.5	2.6	5.0%
R5	52	0.1	0.2%	2.5	2.6	5.0%
R6	52	0.1	0.2%	2.5	2.6	5.0%
R7	52	0.1	0.2%	2.5	2.6	5.0%
R8	52	0.1	0.2%	2.5	2.6	5.0%
R9	52	0.1	0.2%	2.5	2.6	5.0%
R10	52	0.1	0.2%	2.5	2.6	5.0%

Note:

1. All values referenced at 25°C and 1 atm.

Table 10: Predicted H₂S – GLCs for 1-hr, 24 hr and Annual Averaging Periods at Receptors

H ₂ S - 1 hr Averaging period			
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation	
		AERMOD (µg/m ³)	% of Guideline
R1	2,800	0.2	0.01%
R2	2,800	0.4	0.01%
R3	2,800	0.3	0.01%
R4	2,800	0.3	0.01%
R5	2,800	0.3	0.01%
R6	2,800	0.3	0.01%
R7	2,800	0.3	0.01%
R8	2,800	0.2	0.01%
R9	2,800	0.3	0.01%
R10	2,800	0.3	0.01%
H ₂ S - 24 hr Averaging period			
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation	
		AERMOD (µg/m ³)	% of Guideline
R1	150	0.0	0.01%
R2	150	0.1	0.05%
R3	150	0.0	0.02%
R4	150	0.1	0.04%
R5	150	0.1	0.04%
R6	150	0.1	0.04%
R7	150	0.1	0.04%
R8	150	0.0	0.03%
R9	150	0.1	0.04%
R10	150	0.0	0.02%
H ₂ S - Annual Average			
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation	
		AERMOD (µg/m ³)	% of Guideline
R1	2	0.0	0.07%
R2	2	0.0	0.44%
R3	2	0.0	0.31%
R4	2	0.0	0.32%
R5	2	0.0	0.32%
R6	2	0.0	0.23%
R7	2	0.0	0.19%
R8	2	0.0	0.14%
R9	2	0.0	0.27%
R10	2	0.0	0.25%

Note:

1. All values referenced at 25°C and 1 atm.

Table 11: Predicted NH₃ – GLCs for 1-hr Annual Averaging Periods at Receptors

NH ₃ – 1 hr Averaging period			
Receptor	Guideline (µg/m ³)	Maximum Predicted GLCs in Isolation	
		AERMOD (µg/m ³)	% of Guideline
R1	330	6.5	2.0%
R2	330	26.9	8.2%
R3	330	9.1	2.7%
R4	330	9.1	2.8%
R5	330	13.6	4.1%
R6	330	16.0	4.9%
R7	330	9.5	2.9%
R8	330	8.9	2.7%
R9	330	8.0	2.4%
R10	330	7.0	2.1%

Note:

1. All values referenced at 25°C and 1 atm.

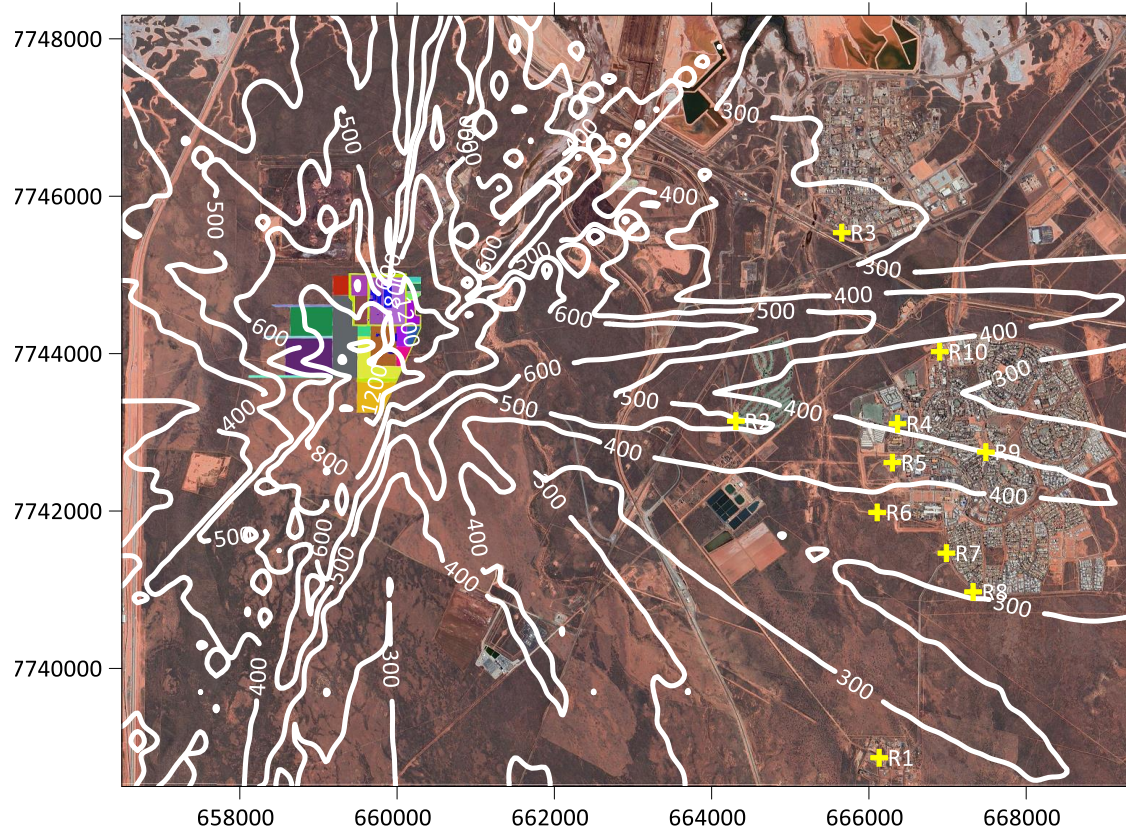


Figure 9: Cumulative 8-hr Max Average CO GLC ($\mu\text{g}/\text{m}^3$) Contour Plot (Guideline: $10,000 \mu\text{g}/\text{m}^3$)

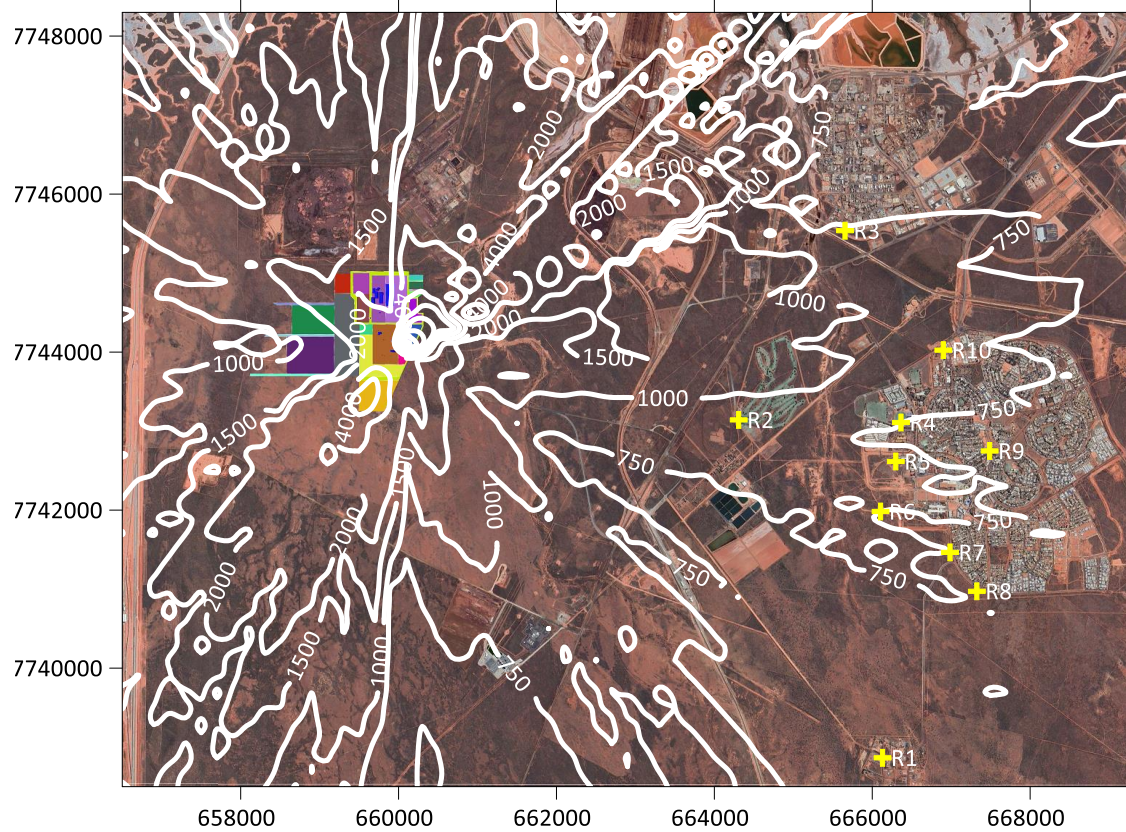


Figure 10: Cumulative 1-hr Max Average CO GLC ($\mu\text{g}/\text{m}^3$) Contour Plot (Guideline: $30,000 \mu\text{g}/\text{m}^3$)

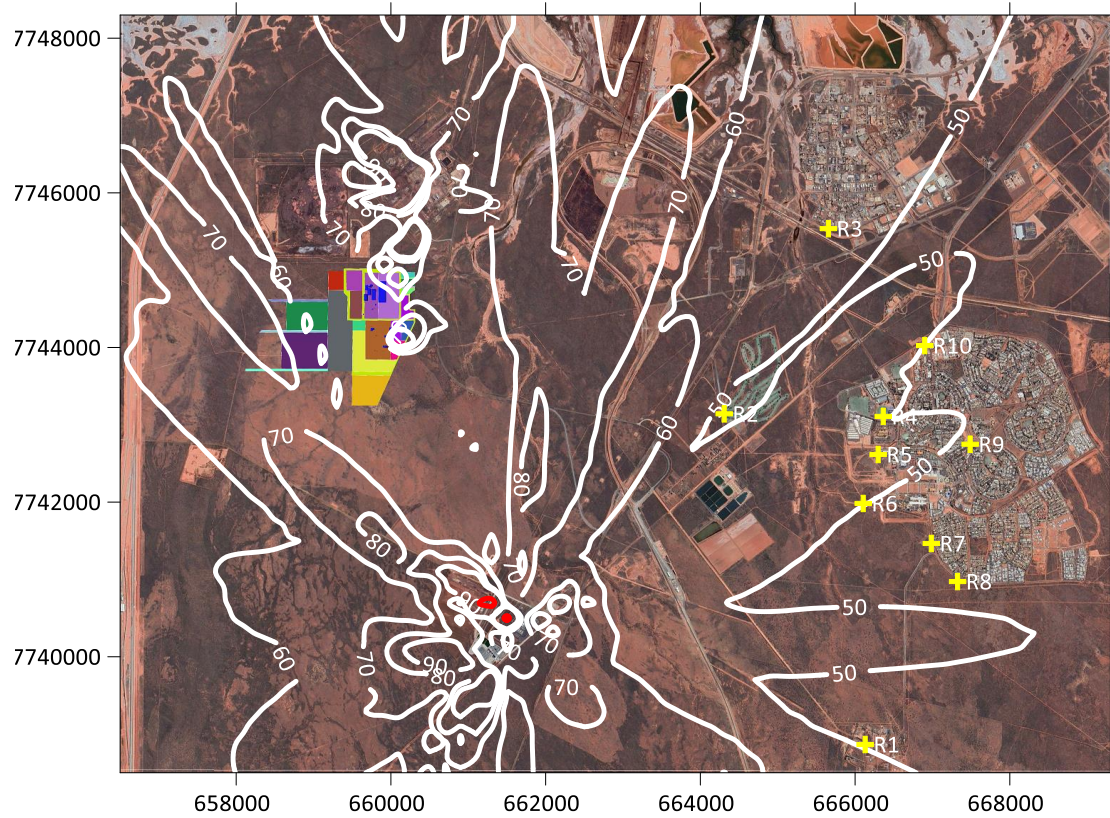


Figure 11: Cumulative 1-hr Max Average NO₂ GLC (µg/m³) Contour Plot (Guideline: 151 µg/m³)

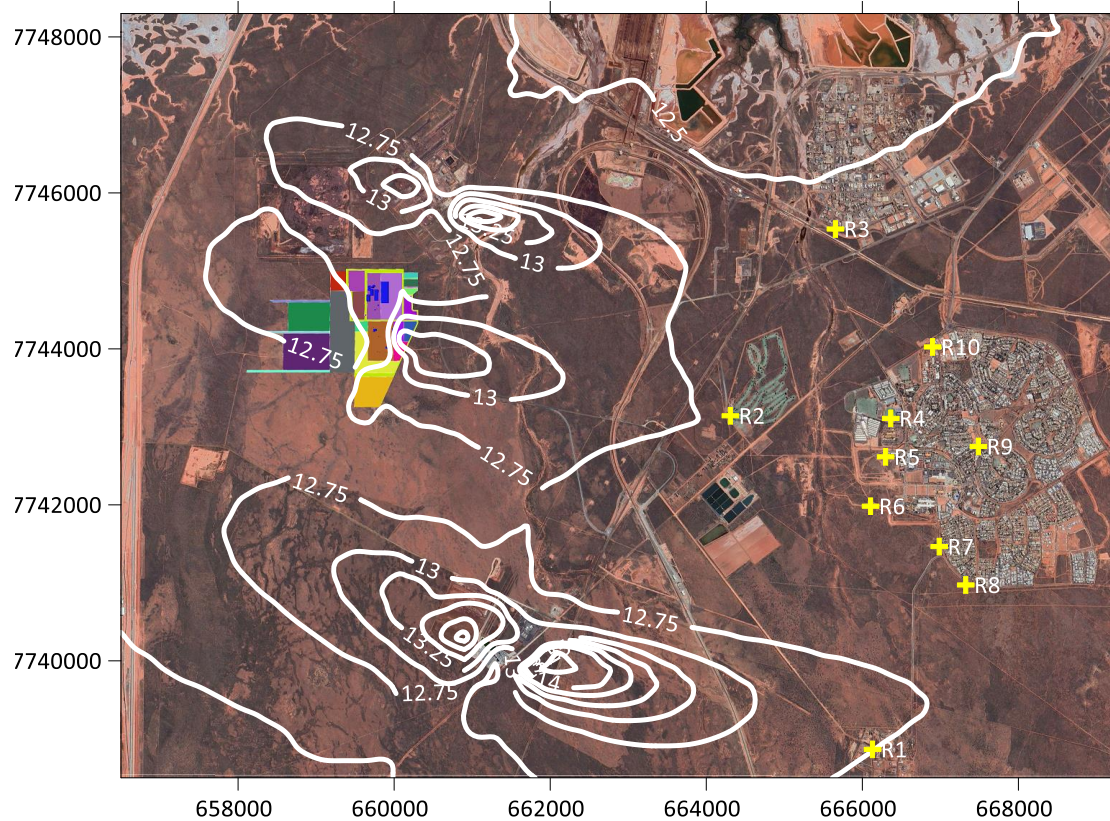


Figure 12: Cumulative Annual Average NO₂ GLC (µg/m³) Contour Plot (Guideline: 28 µg/m³)

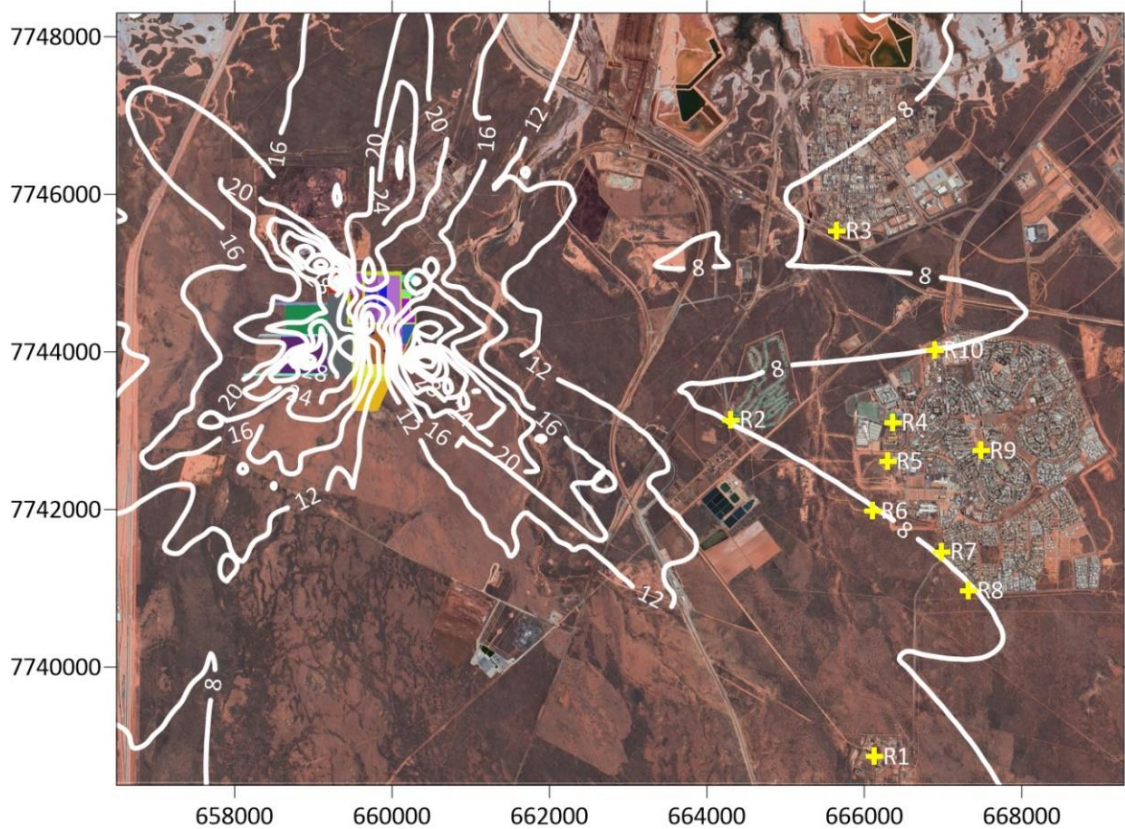


Figure 13: Cumulative 1-hr Max Average SO₂ GLC (µg/m³) Contour Plot (Guideline: 196 µg/m³)

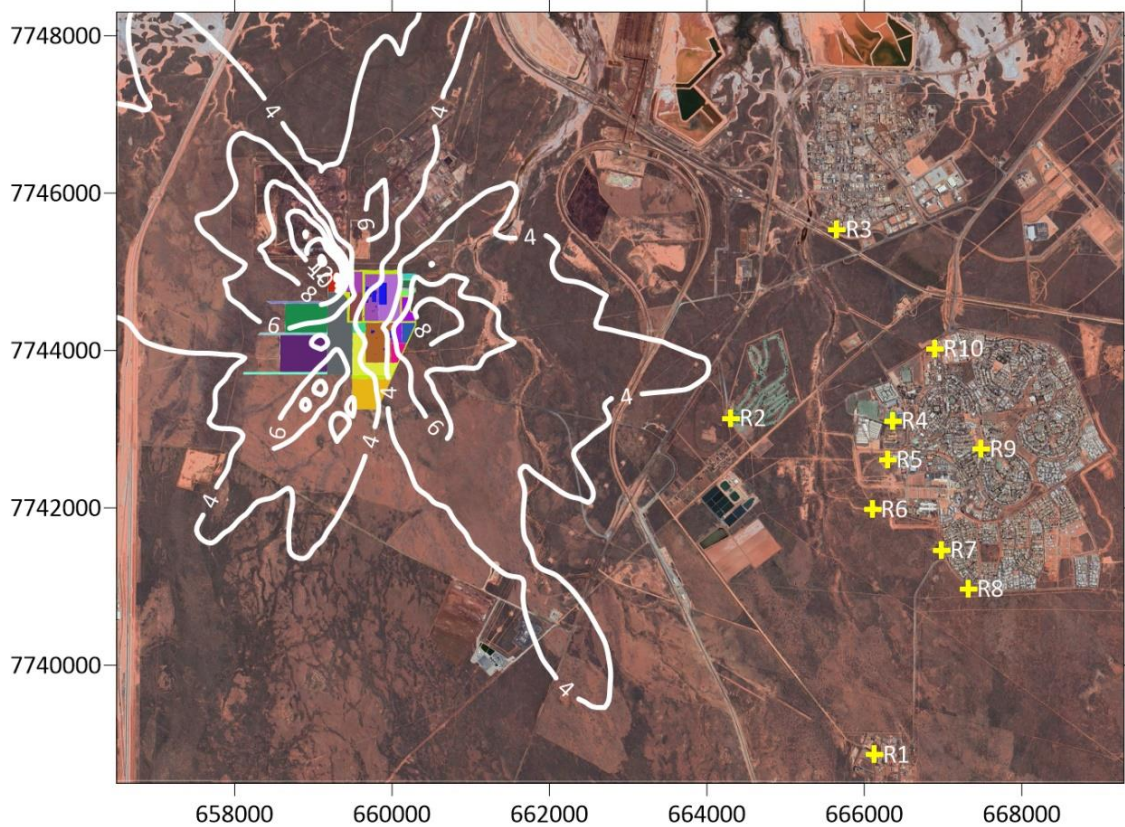


Figure 14: Cumulative 24-hr Max Average SO₂ GLC (µg/m³) Contour Plot (Guideline: 52 µg/m³)

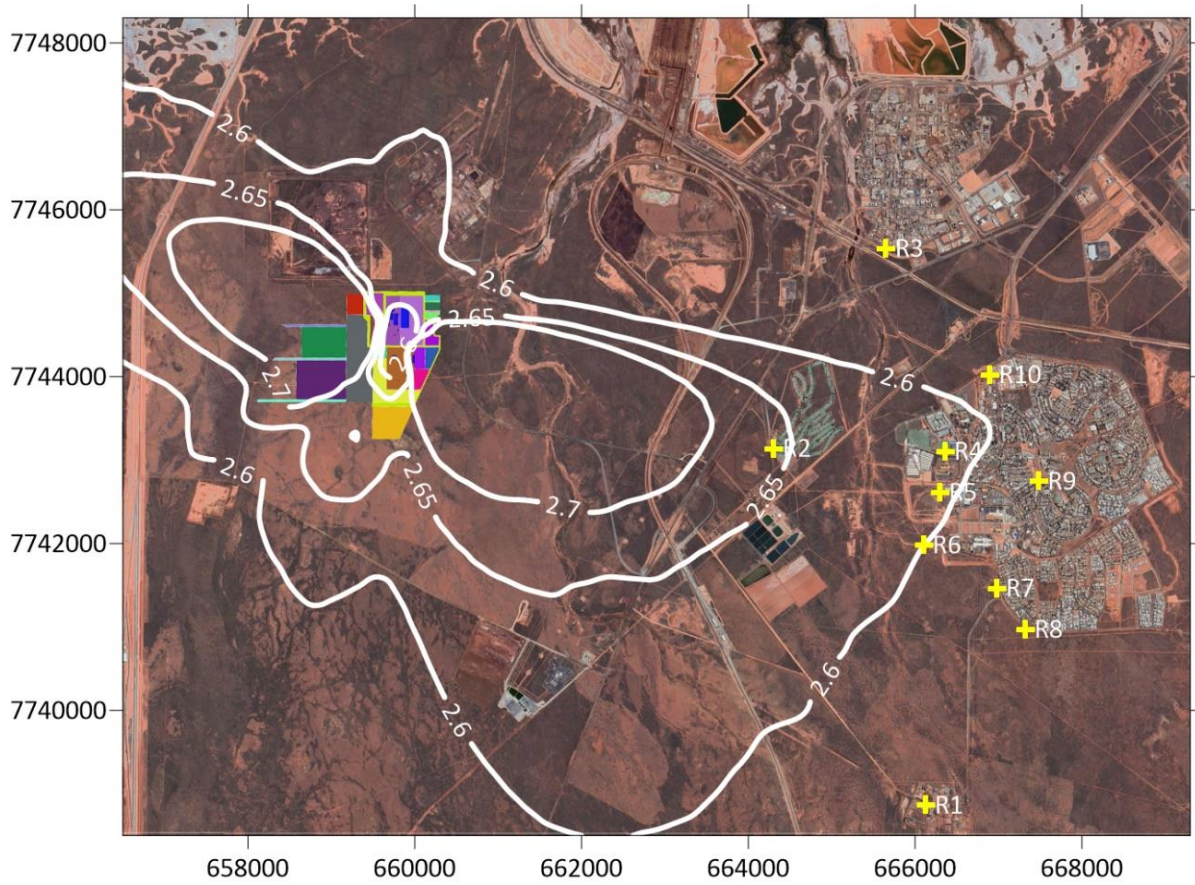


Figure 15: Cumulative Annual Average SO₂ GLC (µg/m³) Contour Plot (Guideline: 52 µg/m³)

6. SUMMARY

Air dispersion modelling has been completed to assess the potential air quality impacts associated with various pollutants of concern (CO, NO₂, SO₂, NH₃ and H₂S) emissions from the proposed Port Hedland Iron Project (Project). The maximum GLCs across the model domain and at the nominated receptor locations have been predicted using the AERMOD model. The results of the modelling indicate that the air quality impacts due to emissions from the Project in isolation and cumulative are predicted to be below the relevant ambient criteria at the receptor locations. No exceedances were predicted at any of the sensitive receptors for the compounds of interest.

7. LIMITATIONS

Ramboll prepared this report in accordance with the scope of work as outlined in our proposal to Preston Consulting Pty Ltd dated 15th June 2023 and in accordance with our understanding and interpretation of current regulatory standards.

The conclusions presented in this report represent Ramboll's professional judgement based on information made available during the course of this assignment and are true and correct to the best of Ramboll's knowledge as at the date of the assessment.

Ramboll did not independently verify all of the written or oral information provided during the course of this investigation. While Ramboll has no reason to doubt the accuracy of the information provided to it, the report is complete and accurate only to the extent that the information provided to Ramboll was itself complete and accurate.

This report does not purport to give legal advice. This advice can only be given by qualified legal advisors.

7.1 User Reliance

This report has been prepared for Preston Consulting Pty Ltd and may not be relied upon by any other person or entity without Ramboll's express written permission.

8. REFERENCES

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New Energy (2012). "Public Environmental Review Boodarie Waste to Energy and Materials Recover Facility, Port Hedland." New Energy Corporation, August 2012.

ENVIRON (2014). "South Hedland Power Station Air Quality Assessment". ENVIRON Australia Pty Ltd, June 2014.

APPENDIX 1

AERMOD INPUT FILES

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**
*****
****
**
** AERMOD Input Produced by:
** AERMOD View Ver. 12.0.0
** Lakes Environmental Software Inc.
** Date: 29/05/2024
** File:
E:\Preston\Green_steel_air_emiss\AERMOD\
GSP\GSP.ADI
**
*****
****
**
**
*****
****
** AERMOD Control Pathway
*****
****
**
**
CO STARTING
  TITLEONE E:\P0930 Boodarie
PS\Sc1\Sc1.isc
  TITLETWO TEA South Hedland Power
Station -Met Assessment
  MODELOPT CONC
  AVERTIME 1
  POLLUTID CO
  RUNORNOT RUN
  SAVEFILE SCENARIOS.SV1 5
  ERRORFIL SCENARIOS.ERR
CO FINISHED
**
*****
****
** AERMOD Source Pathway
*****
****
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
  LOCATION STCK1      POINT
659817.920 7744095.010    10.570
** DESCRSRC E01
  LOCATION STCK3      POINT
659907.350 7743899.480    13.810

** DESCRSRC E03
  LOCATION STCK4      POINT
659906.840 7743892.910    13.550
** DESCRSRC E04
  LOCATION STCK5      POINT
659750.720 7744209.200    11.620
** DESCRSRC E05
  LOCATION STCK6      POINT
659820.440 7743893.920    12.580
** DESCRSRC E07
  LOCATION STCK7      POINT
659884.110 7744162.710    10.140
** DESCRSRC E08
  LOCATION STCK8      POINT
659873.500 7744163.220    10.000
** DESCRSRC E09
  LOCATION STCK9      POINT
659857.330 7744215.760     9.000
** DESCRSRC E10
  LOCATION STCK10     POINT
659997.790 7744124.310    10.620
** DESCRSRC E12
  LOCATION STCK11     POINT
659759.810 7744153.110    11.570
** DESCRSRC E13
  LOCATION STCK12     POINT
659791.150 7744448.910    11.920
** DESCRSRC SK 551
  LOCATION STCK13     POINT
661307.823 7740080.407    16.790
** DESCRSRC OC1
  LOCATION STCK14     POINT
661337.754 7740065.041    17.070
** DESCRSRC CC1
  LOCATION STCK15     POINT
661361.306 7740041.437    17.010
** DESCRSRC CC2
  LOCATION STCK16     POINT
661652.728 7740278.013    20.000
** DESCRSRC A1
  LOCATION STCK17     POINT
661674.825 7740261.824    19.730
** DESCRSRC A2
  LOCATION STCK18     POINT
661696.390 7740245.665    19.090
** DESCRSRC A3
  LOCATION STCK19     POINT
660573.224 7745893.649    18.740
** DESCRSRC A4
  LOCATION STCK20     POINT
660579.589 7745886.536    17.870

```

** DESCRSRC A5				BUILDHGT STCK1	23.80	49.50
LOCATION STCK21	POINT			49.50	49.50	49.50
660600.000	7740800.000	15.670		0.00		
** DESCRSRC WTE				BUILDHGT STCK1	0.00	0.00
** Source Parameters **				0.00	0.00	0.00
SRCPARAM STCK1	1.0	60.000		33.30		
631.150	18.14	4.3		BUILDHGT STCK1	33.30	33.30
SRCPARAM STCK3	1.0	30.000		52.90	52.90	0.00
329.150	9.4	1.7		0.00		
SRCPARAM STCK4	1.0	30.000		BUILDHGT STCK1	142.00	142.00
303.150	20	1.4		0.00	0.00	0.00
SRCPARAM STCK5	1.0	30.000		0.00		
308.150	20.3	1		BUILDHGT STCK3	142.00	142.00
SRCPARAM STCK6	1.0	137.200		142.00	142.00	142.00
371.150	19	1.4		BUILDHGT STCK3	142.00	0.00
SRCPARAM STCK7	1.0	20.000		0.00	0.00	0.00
353.150	29.3	0.9		BUILDHGT STCK3	0.00	0.00
SRCPARAM STCK8	1.0	20.000		0.00	0.00	0.00
353.150	29.3	0.3		BUILDHGT STCK3	142.00	142.00
SRCPARAM STCK9	1.0	17.500		142.00	142.00	142.00
313.150	23.2	0.4		BUILDHGT STCK3	142.00	0.00
SRCPARAM STCK10	1.0	12.000		0.00	0.00	0.00
313.150	10.9	6.1		BUILDHGT STCK3	0.00	0.00
SRCPARAM STCK11	1.0	20.000		BUILDHGT STCK4	142.00	142.00
298.150	9.2	0.3		142.00	142.00	142.00
SRCPARAM STCK12	1.0	50.000		BUILDHGT STCK4	0.00	0.00
374.150	19.4321605509586	4.85		0.00	0.00	0.00
SRCPARAM STCK13	1.0	25.000		BUILDHGT STCK4	0.00	0.00
743.150	33.92976	3.16		0.00	0.00	0.00
SRCPARAM STCK14	1.0	35.000		BUILDHGT STCK4	142.00	142.00
383.150	33.901	2.27		142.00	142.00	142.00
SRCPARAM STCK15	1.0	35.000		BUILDHGT STCK4	0.00	0.00
383.150	33.901	2.27		0.00	0.00	0.00
SRCPARAM STCK16	1.0	13.000		BUILDHGT STCK4	0.00	0.00
773.000	38.05	3.2		0.00	0.00	0.00
SRCPARAM STCK17	1.0	13.000		BUILDHGT STCK5	49.50	49.50
773.000	38.05	3.2		49.50	0.00	0.00
SRCPARAM STCK18	1.0	13.000		BUILDHGT STCK5	0.00	0.00
773.000	38.05	3.2		0.00	0.00	49.50
SRCPARAM STCK19	1.0	15.500		BUILDHGT STCK5	49.50	49.50
813.000	24.36305	3.5		49.50	49.50	49.50
SRCPARAM STCK20	1.0	15.500		BUILDHGT STCK5	49.50	49.50
813.000	24.36305	3.5		49.50	0.00	0.00
SRCPARAM STCK21	1.0	30.000		BUILDHGT STCK5	0.00	0.00
438.000	17.94758	2.5		0.00	0.00	49.50
** Building Downwash **				BUILDHGT STCK5	49.50	49.50
BUILDHGT STCK1	0.00	0.00		49.50	49.50	49.50
0.00	0.00	0.00	0.00	BUILDHGT STCK6	0.00	0.00
BUILDHGT STCK1	0.00	0.00		0.00	0.00	0.00
0.00	0.00	0.00	0.00			

BUILDHGT STCK6	0.00	0.00		BUILDHGT STCK10	142.00	142.00
0.00 0.00 0.00	0.00			52.90 52.90 52.90	52.90	
BUILDHGT STCK6	0.00	0.00		BUILDHGT STCK10	52.90	33.30
0.00 0.00 0.00	0.00			33.30 33.30 33.30	33.30	
BUILDHGT STCK6	0.00	0.00		BUILDHGT STCK10	33.30	33.30
0.00 0.00 0.00	142.00			33.30 33.30 33.30	33.30	
BUILDHGT STCK6	142.00	0.00		BUILDHGT STCK10	33.30	52.90
0.00 0.00 0.00	0.00			52.90 52.90 52.90	52.90	
BUILDHGT STCK6	0.00	0.00		BUILDHGT STCK10	52.90	33.30
0.00 0.00 0.00	0.00			33.30 33.30 33.30	33.30	
				BUILDHGT STCK10	33.30	33.30
BUILDHGT STCK7	0.00	0.00		33.30 33.30 33.30	142.00	
0.00 0.00 0.00	0.00					
BUILDHGT STCK7	33.30	33.30		BUILDHGT STCK11	49.50	49.50
33.30 49.50 49.50	0.00			49.50 49.50 49.50	49.50	
BUILDHGT STCK7	33.30	33.30		BUILDHGT STCK11	49.50	49.50
33.30 33.30 0.00	0.00			23.80 23.80 23.80	49.50	
BUILDHGT STCK7	0.00	0.00		BUILDHGT STCK11	49.50	49.50
0.00 0.00 0.00	0.00			49.50 49.50 49.50	49.50	
BUILDHGT STCK7	33.30	33.30		BUILDHGT STCK11	49.50	49.50
33.30 33.30 33.30	33.30			49.50 49.50 49.50	49.50	
BUILDHGT STCK7	52.90	52.90		BUILDHGT STCK11	49.50	49.50
52.90 142.00 142.00	0.00			23.80 23.80 23.80	49.50	
				BUILDHGT STCK11	49.50	49.50
BUILDHGT STCK8	0.00	0.00		49.50 49.50 49.50	49.50	
0.00 0.00 0.00	0.00					
BUILDHGT STCK8	33.30	33.30		BUILDHGT STCK12	0.00	0.00
33.30 49.50 49.50	0.00			0.00 0.00 5.00	5.00	
BUILDHGT STCK8	0.00	33.30		BUILDHGT STCK12	5.00	0.00
33.30 0.00 0.00	0.00			0.00 0.00 0.00	53.60	
BUILDHGT STCK8	0.00	0.00		BUILDHGT STCK12	53.60	53.60
0.00 0.00 0.00	0.00			53.60 53.60 38.30	0.00	
BUILDHGT STCK8	33.30	33.30		BUILDHGT STCK12	34.00	34.00
33.30 33.30 33.30	33.30			34.00 34.00 34.00	34.00	
BUILDHGT STCK8	52.90	52.90		BUILDHGT STCK12	0.00	0.00
142.00 142.00 0.00	0.00			0.00 0.00 0.00	0.00	
				BUILDHGT STCK12	0.00	0.00
BUILDHGT STCK9	0.00	0.00		0.00 0.00 0.00	0.00	
0.00 0.00 49.50	49.50					
BUILDHGT STCK9	49.50	49.50		BUILDHGT STCK13	0.00	0.00
0.00 0.00 0.00	0.00			0.00 0.00 0.00	0.00	
BUILDHGT STCK9	0.00	0.00		BUILDHGT STCK13	0.00	0.00
0.00 0.00 0.00	0.00			0.00 0.00 0.00	0.00	
BUILDHGT STCK9	0.00	0.00		BUILDHGT STCK13	0.00	0.00
0.00 0.00 0.00	0.00			0.00 0.00 0.00	0.00	
BUILDHGT STCK9	0.00	0.00		BUILDHGT STCK13	0.00	0.00
0.00 33.30 33.30	33.30			0.00 0.00 0.00	0.00	
BUILDHGT STCK9	33.30	52.90		BUILDHGT STCK13	0.00	0.00
52.90 0.00 0.00	0.00			0.00 0.00 0.00	0.00	
				BUILDHGT STCK13	0.00	0.00
				0.00 0.00 0.00	0.00	

[illegible]

BUILDHGT STCK21	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDHGT STCK21	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK1	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK1	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK1	41.86	35.11	
35.20 34.22 32.20	0.00		
BUILDWID STCK1	0.00	0.00	
0.00 0.00 0.00	90.49		
BUILDWID STCK1	104.12	114.58	
21.50 26.04 0.00	0.00		
BUILDWID STCK1	39.22	42.43	
0.00 0.00 0.00	0.00		
BUILDWID STCK3	44.13	44.66	
44.35 42.43 39.22	34.81		
BUILDWID STCK3	29.35	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK3	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK3	44.13	44.66	
44.35 42.43 39.22	34.81		
BUILDWID STCK3	29.35	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK3	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK4	44.13	44.81	
44.35 42.43 39.22	34.81		
BUILDWID STCK4	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK4	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK4	44.13	44.81	
44.35 42.43 39.22	34.81		
BUILDWID STCK4	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK4	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK5	32.20	34.22	
35.20 0.00 0.00	0.00		
BUILDWID STCK5	0.00	0.00	
0.00 0.00 28.61	31.76		
BUILDWID STCK5	33.95	35.11	
35.20 34.22 32.20	29.20		

BUILDWID STCK5	32.20	34.22	
35.20 0.00 0.00	0.00		
BUILDWID STCK5	0.00	0.00	
0.00 0.00 28.61	31.76		
BUILDWID STCK5	33.95	35.11	
35.20 34.22 32.20	29.20		
BUILDWID STCK6	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK6	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK6	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK6	0.00	0.00	
0.00 0.00 0.00	33.67		
BUILDWID STCK6	29.35	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK6	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK7	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK7	104.12	114.58	
121.56 24.59 28.61	0.00		
BUILDWID STCK7	142.34	136.79	
127.09 113.53 0.00	0.00		
BUILDWID STCK7	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK7	104.12	114.58	
121.56 133.01 140.42	143.56		
BUILDWID STCK7	34.47	35.27	
35.00 44.92 44.13	0.00		
BUILDWID STCK8	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK8	104.12	114.58	
121.56 24.59 28.61	0.00		
BUILDWID STCK8	0.00	136.79	
127.09 0.00 0.00	0.00		
BUILDWID STCK8	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK8	104.12	114.58	
121.56 133.01 140.42	143.56		
BUILDWID STCK8	34.47	35.27	
44.35 44.92 0.00	0.00		
BUILDWID STCK9	0.00	0.00	
0.00 0.00 33.95	31.76		
BUILDWID STCK9	28.61	24.59	
0.00 0.00 0.00	0.00		

BUILDWID STCK9	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK9	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK9	0.00	0.00	
0.00 133.01 140.42	143.56		
BUILDWID STCK9	142.34	35.27	
35.00 0.00 0.00	0.00		
BUILDWID STCK10	44.13	44.92	
35.00 35.27 34.47	32.62		
BUILDWID STCK10	29.78	114.58	
121.56 133.01 140.42	143.56		
BUILDWID STCK10	142.34	136.79	
127.09 113.53 96.52	19.00		
BUILDWID STCK10	73.83	33.66	
35.00 35.27 34.47	32.62		
BUILDWID STCK10	29.78	114.58	
121.56 133.01 140.42	143.56		
BUILDWID STCK10	142.34	136.79	
127.09 113.53 96.52	42.00		
BUILDWID STCK11	32.20	34.22	
35.20 35.11 33.95	31.76		
BUILDWID STCK11	28.61	24.59	
31.15 35.54 38.85	31.76		
BUILDWID STCK11	33.95	35.11	
35.20 34.22 32.20	29.20		
BUILDWID STCK11	32.20	34.22	
35.20 35.11 33.95	31.76		
BUILDWID STCK11	28.61	24.59	
31.15 35.54 38.85	31.76		
BUILDWID STCK11	33.95	35.11	
35.20 34.22 32.20	29.20		
BUILDWID STCK12	0.00	0.00	
0.00 0.00 15.00	13.56		
BUILDWID STCK12	11.71	0.00	
0.00 0.00 0.00	84.64		
BUILDWID STCK12	82.13	77.14	
69.79 60.33 64.88	0.00		
BUILDWID STCK12	136.50	177.86	
213.81 243.26 265.33	279.33		
BUILDWID STCK12	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK12	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK13	0.00	0.00	
0.00 0.00 0.00	0.00		

BUILDWID STCK13	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK13	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK13	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK13	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK13	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK13	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK14	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK14	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK14	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK14	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK14	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK14	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK14	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK15	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK15	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK15	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK15	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK15	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK15	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK16	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK16	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK16	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK16	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK16	0.00	0.00	
0.00 0.00 0.00	0.00		
BUILDWID STCK16	0.00	0.00	
0.00 0.00 0.00	0.00		

BUILDWID STCK17	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK17	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK17	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK17	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK17	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK17	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK18	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK18	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK18	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK18	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK18	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK19	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK19	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK19	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK19	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK19	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK20	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK20	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK20	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK20	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK20	0.00	0.00
0.00 0.00 0.00	0.00	

BUILDWID STCK21	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK21	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK21	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK21	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK21	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDWID STCK21	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK1	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK1	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK1	35.11	33.95
31.76 28.61 24.59	0.00	
BUILDLEN STCK1	0.00	0.00
0.00 0.00 0.00	127.09	
BUILDLEN STCK1	113.53	96.52
28.00 31.31 0.00	0.00	
BUILDLEN STCK1	42.43	39.22
0.00 0.00 0.00	0.00	
BUILDLEN STCK3	23.00	29.35
34.81 39.22 42.43	44.35	
BUILDLEN STCK3	44.92	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK3	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK3	23.00	29.35
34.81 39.22 42.43	44.35	
BUILDLEN STCK3	44.92	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK3	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK4	23.00	29.35
34.81 39.22 42.43	44.35	
BUILDLEN STCK4	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK4	0.00	0.00
0.00 0.00 0.00	0.00	
BUILDLEN STCK4	23.00	29.35
34.81 39.22 42.43	44.35	
BUILDLEN STCK4	0.00	0.00
0.00 0.00 0.00	0.00	

BUILDLEN STCK4	0.00	0.00		BUILDLEN STCK8	113.53	96.52
0.00 0.00 0.00 0.00				76.57 73.83 68.85 61.95		
BUILDLEN STCK5	24.59	28.61		BUILDLEN STCK8	35.27	34.47
31.76 0.00 0.00 0.00				34.81 29.35 0.00 0.00		
BUILDLEN STCK5	0.00	0.00		BUILDLEN STCK9	0.00	0.00
0.00 0.00 34.22 35.20				0.00 0.00 35.11 35.20		
BUILDLEN STCK5	35.11	33.95		BUILDLEN STCK9	34.22	32.20
31.76 28.61 24.59 19.82				0.00 0.00 0.00 0.00		
BUILDLEN STCK5	24.59	28.61		BUILDLEN STCK9	0.00	0.00
31.76 0.00 0.00 0.00				0.00 0.00 0.00 0.00		
BUILDLEN STCK5	0.00	0.00		BUILDLEN STCK9	0.00	0.00
0.00 0.00 34.22 35.20				0.00 0.00 0.00 0.00		
BUILDLEN STCK5	35.11	33.95		BUILDLEN STCK9	0.00	0.00
31.76 28.61 24.59 19.82				0.00 73.83 68.85 61.95		
BUILDLEN STCK6	0.00	0.00		BUILDLEN STCK9	73.05	34.47
0.00 0.00 0.00 0.00				32.62 0.00 0.00 0.00		
BUILDLEN STCK6	0.00	0.00		BUILDLEN STCK10	23.00	29.35
0.00 0.00 0.00 0.00				32.62 34.47 35.27 35.00		
BUILDLEN STCK6	0.00	0.00		BUILDLEN STCK10	33.66	96.52
0.00 0.00 0.00 0.00				76.57 73.83 68.85 61.95		
BUILDLEN STCK6	0.00	0.00		BUILDLEN STCK10	73.05	81.92
0.00 0.00 0.00 44.35				90.49 104.12 114.58 91.00		
BUILDLEN STCK6	44.92	0.00		BUILDLEN STCK10	133.01	29.78
0.00 0.00 0.00 0.00				32.62 34.47 35.27 35.00		
BUILDLEN STCK6	0.00	0.00		BUILDLEN STCK10	33.66	96.52
0.00 0.00 0.00 0.00				76.57 73.83 68.85 61.95		
BUILDLEN STCK7	0.00	0.00		BUILDLEN STCK10	73.05	81.92
0.00 0.00 0.00 0.00				90.49 104.12 114.58 15.95		
BUILDLEN STCK7	113.53	96.52		BUILDLEN STCK11	24.59	28.61
76.57 32.20 34.22 0.00				31.76 33.95 35.11 35.20		
BUILDLEN STCK7	73.05	81.92		BUILDLEN STCK11	34.22	32.20
90.49 104.12 0.00 0.00				29.20 32.20 34.22 35.20		
BUILDLEN STCK7	0.00	0.00		BUILDLEN STCK11	35.11	33.95
0.00 0.00 0.00 0.00				31.76 28.61 24.59 19.82		
BUILDLEN STCK7	113.53	96.52		BUILDLEN STCK11	24.59	28.61
76.57 73.83 68.85 61.95				31.76 33.95 35.11 35.20		
BUILDLEN STCK7	35.27	34.47		BUILDLEN STCK11	34.22	32.20
32.62 29.35 23.00 0.00				29.20 32.20 34.22 35.20		
BUILDLEN STCK8	0.00	0.00		BUILDLEN STCK11	35.11	33.95
0.00 0.00 0.00 0.00				31.76 28.61 24.59 19.82		
BUILDLEN STCK8	113.53	96.52		BUILDLEN STCK12	0.00	0.00
76.57 32.20 34.22 0.00				0.00 0.00 15.99 16.49		
BUILDLEN STCK8	0.00	81.92		BUILDLEN STCK12	16.49	0.00
90.49 0.00 0.00 0.00				0.00 0.00 0.00 69.79		
BUILDLEN STCK8	0.00	0.00		BUILDLEN STCK12	77.14	82.13
0.00 0.00 0.00 0.00				84.64 84.57 111.98 0.00		

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BUILDLEN STCK20				0.00	0.00	XBADJ STCK4		50.53	53.28	
0.00	0.00	0.00	0.00			54.42	53.90	51.74	48.01	
BUILDLEN STCK20				0.00	0.00	XBADJ STCK4		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
BUILDLEN STCK20				0.00	0.00	XBADJ STCK4		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
BUILDLEN STCK20				0.00	0.00	XBADJ STCK4		-73.53	-82.63	-
0.00	0.00	0.00	0.00			89.23	-93.11	-94.16	-92.36	
BUILDLEN STCK20				0.00	0.00	XBADJ STCK4		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
						XBADJ STCK4		0.00	0.00	
BUILDLEN STCK21				0.00	0.00	0.00		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
BUILDLEN STCK21				0.00	0.00	XBADJ STCK5		-38.17	-35.18	-
0.00	0.00	0.00	0.00			31.13	0.00	0.00	0.00	
BUILDLEN STCK21				0.00	0.00	XBADJ STCK5		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	13.49	16.16	
BUILDLEN STCK21				0.00	0.00	XBADJ STCK5		18.33	19.96	
0.00	0.00	0.00	0.00			20.97	21.35	21.08	20.17	
BUILDLEN STCK21				0.00	0.00	XBADJ STCK5		13.58	6.57	-
0.00	0.00	0.00	0.00			0.64	0.00	0.00	0.00	
BUILDLEN STCK21				0.00	0.00	XBADJ STCK5		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	-47.70	-51.35	
						XBADJ STCK5		-53.44	-53.91	-
XBADJ STCK1			0.00	0.00		52.74	-49.96	-45.67	-39.99	
0.00	0.00	0.00	0.00			XBADJ STCK6		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
XBADJ STCK1			-106.54	-110.71	-	XBADJ STCK6		0.00	0.00	
111.52	-108.94	-103.04	0.00			0.00	0.00	0.00	0.00	
XBADJ STCK1			0.00	0.00		XBADJ STCK6		0.00	0.00	
0.00	0.00	0.00	-214.81			0.00	0.00	0.00	0.00	
XBADJ STCK1			-213.46	-205.63	-	XBADJ STCK6		0.00	0.00	
142.98	-144.93	0.00	0.00			0.00	0.00	0.00	-166.68	
XBADJ STCK1			-222.49	-222.02		XBADJ STCK6		-168.59	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
						XBADJ STCK6		0.00	0.00	
XBADJ STCK3			43.97	46.93		0.00	0.00	0.00	0.00	
48.47	48.53	47.12	44.28			XBADJ STCK7		0.00	0.00	
XBADJ STCK3			40.10	0.00		0.00	0.00	0.00	0.00	
0.00	0.00	0.00	0.00			XBADJ STCK7		14.58	32.17	
0.00	0.00	0.00	0.00			48.79	-129.03	-127.76	0.00	
XBADJ STCK3			-66.97	-76.29	-	XBADJ STCK7		62.10	45.28	
83.28	-87.75	-89.55	-88.63			27.08	8.05	0.00	0.00	
XBADJ STCK3			-85.02	0.00		XBADJ STCK7		0.00	0.00	
0.00	0.00	0.00	0.00			0.00	0.00	0.00	0.00	
XBADJ STCK3			0.00	0.00		XBADJ STCK7		-128.11	-128.69	-
0.00	0.00	0.00	0.00			125.36	-134.02	-138.62	-138.99	
						XBADJ STCK7		-117.59	-119.39	-
						117.57	-242.05	-236.39	0.00	

	XBADJ	STCK8	0.00	0.00		XBADJ	STCK11	-10.43	-5.10
0.00	0.00	0.00	0.00		0.38	5.85	11.15	16.10	
	XBADJ	STCK8	24.38	42.53		XBADJ	STCK12	0.00	0.00
59.40	-118.49	-117.62	0.00		0.00	0.00	-34.80	-35.73	
	XBADJ	STCK8	0.00	52.49		XBADJ	STCK12	-35.57	0.00
32.82	0.00	0.00	0.00		0.00	0.00	0.00	-193.56	
	XBADJ	STCK8	0.00	0.00		XBADJ	STCK12	-206.43	-213.02
0.00	0.00	0.00	0.00		213.15	-206.79	-289.30	0.00	
	XBADJ	STCK8	-137.90	-139.05	-	XBADJ	STCK12	-365.27	-374.59
135.97	-144.56	-148.76	-148.44		372.53	-359.16	-334.86	-300.40	
	XBADJ	STCK8	-126.04	-126.60	-	XBADJ	STCK12	0.00	0.00
246.09	-246.15	0.00	0.00		0.00	0.00	0.00	0.00	
	XBADJ	STCK9	0.00	0.00		XBADJ	STCK12	0.00	0.00
0.00	0.00	-106.22	-109.53		0.00	0.00	0.00	0.00	
	XBADJ	STCK9	-109.51	-106.17		XBADJ	STCK13	0.00	0.00
0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	XBADJ	STCK9	0.00	0.00		XBADJ	STCK13	0.00	0.00
0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	XBADJ	STCK9	0.00	0.00		XBADJ	STCK13	0.00	0.00
0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	XBADJ	STCK9	0.00	0.00		XBADJ	STCK13	0.00	0.00
0.00	-169.61	-181.92	-188.71		0.00	0.00	0.00	0.00	
	XBADJ	STCK9	-189.77	-177.24	-	XBADJ	STCK13	0.00	0.00
176.90	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
	XBADJ	STCK10	-193.15	-195.27	-	XBADJ	STCK13	0.00	0.00
78.36	-82.33	-83.79	-82.71		0.00	0.00	0.00	0.00	
	XBADJ	STCK10	-79.11	-73.11	-	XBADJ	STCK14	0.00	0.00
64.89	-58.43	-50.20	-40.61		0.00	0.00	0.00	0.00	
	XBADJ	STCK10	-49.66	-57.21	-	XBADJ	STCK14	0.00	0.00
63.02	-66.91	-68.77	-68.54		0.00	0.00	0.00	0.00	
	XBADJ	STCK10	-69.53	42.24		XBADJ	STCK14	0.00	0.00
45.74	47.86	48.52	47.71		0.00	0.00	0.00	0.00	
	XBADJ	STCK10	45.45	-23.40	-	XBADJ	STCK14	0.00	0.00
11.68	-15.40	-18.66	-21.35		0.00	0.00	0.00	0.00	
	XBADJ	STCK10	-23.38	-24.71	-	XBADJ	STCK14	0.00	0.00
27.47	-37.21	-45.81	-185.16		0.00	0.00	0.00	0.00	
	XBADJ	STCK11	15.49	14.42		XBADJ	STCK14	0.00	0.00
12.90	11.00	8.76	6.25		0.00	0.00	0.00	0.00	
	XBADJ	STCK11	3.55	0.75	-	XBADJ	STCK15	0.00	0.00
2.08	-8.29	-14.24	-19.76		0.00	0.00	0.00	0.00	
	XBADJ	STCK11	-24.68	-28.85	-	XBADJ	STCK15	0.00	0.00
32.15	-34.47	-35.74	-35.92		0.00	0.00	0.00	0.00	
	XBADJ	STCK11	-40.08	-43.03	-	XBADJ	STCK15	0.00	0.00
44.67	-44.95	-43.86	-41.45		0.00	0.00	0.00	0.00	
	XBADJ	STCK11	-37.77	-32.95	-	XBADJ	STCK15	0.00	0.00
27.12	-23.91	-19.98	-15.44		0.00	0.00	0.00	0.00	

XBADJ	STCK15	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK15	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK16	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK16	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK16	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK16	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK16	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK16	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK17	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK17	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK17	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK17	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK17	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK18	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK18	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK18	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK18	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK18	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00

XBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
XBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK1	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK1	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK1	31.17	19.14
2.57	-14.07	-30.29	0.00
YBADJ	STCK1	0.00	0.00
0.00	0.00	0.00	46.79
YBADJ	STCK1	19.13	-9.10
12.97	-9.62	0.00	0.00
YBADJ	STCK1	24.16	-11.16
0.00	0.00	0.00	0.00
YBADJ	STCK3	-40.21	-29.97
18.81	-7.09	4.85	16.65
YBADJ	STCK3	27.93	0.00
0.00	0.00	0.00	0.00

YBADJ	STCK3	0.00	0.00		YBADJ	STCK7	-60.11	-46.08	-
0.00	0.00	0.00	0.00		30.64	-3.25	-22.81	0.00	
YBADJ	STCK3	40.21	29.97		YBADJ	STCK7	32.50	47.01	
18.81	7.09	-4.85	-16.65		60.09	71.34	0.00	0.00	
YBADJ	STCK3	-27.93	0.00		YBADJ	STCK7	0.00	0.00	
0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
YBADJ	STCK3	0.00	0.00		YBADJ	STCK7	60.11	46.08	
0.00	0.00	0.00	0.00		30.64	15.05	-0.99	-17.00	
					YBADJ	STCK7	21.44	3.75	-
YBADJ	STCK4	-39.57	-28.20	-	14.04	5.63	-33.93	0.00	
15.97	-3.25	9.56	22.08						
YBADJ	STCK4	0.00	0.00		YBADJ	STCK8	0.00	0.00	
0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
YBADJ	STCK4	0.00	0.00		YBADJ	STCK8	-64.22	-48.42	-
0.00	0.00	0.00	0.00		31.15	-1.91	-19.66	0.00	
YBADJ	STCK4	39.57	28.20		YBADJ	STCK8	0.00	54.81	
15.97	3.25	-9.56	-22.08		69.02	0.00	0.00	0.00	
YBADJ	STCK4	0.00	0.00		YBADJ	STCK8	0.00	0.00	
0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
YBADJ	STCK4	0.00	0.00		YBADJ	STCK8	64.22	48.42	
0.00	0.00	0.00	0.00		31.15	13.71	-4.14	-21.87	
					YBADJ	STCK8	15.01	-4.05	
YBADJ	STCK5	-26.51	-30.59	-	36.10	-4.16	0.00	0.00	
33.75	0.00	0.00	0.00						
YBADJ	STCK5	0.00	0.00		YBADJ	STCK9	0.00	0.00	
0.00	0.00	-20.87	-15.25		0.00	0.00	26.57	10.77	
YBADJ	STCK5	-9.15	-2.78		YBADJ	STCK9	-5.36	-21.32	
3.67	10.02	16.06	21.61		0.00	0.00	0.00	0.00	
YBADJ	STCK5	26.51	30.59		YBADJ	STCK9	0.00	0.00	
33.75	0.00	0.00	0.00		0.00	0.00	0.00	0.00	
YBADJ	STCK5	0.00	0.00		YBADJ	STCK9	0.00	0.00	
0.00	0.00	20.87	15.25		0.00	0.00	0.00	0.00	
YBADJ	STCK5	9.15	2.78	-	YBADJ	STCK9	0.00	0.00	
3.67	-10.02	-16.06	-21.61		0.00	62.65	39.70	15.55	
					YBADJ	STCK9	-9.07	17.34	-
YBADJ	STCK6	0.00	0.00		10.71	0.00	0.00	0.00	
0.00	0.00	0.00	0.00						
YBADJ	STCK6	0.00	0.00		YBADJ	STCK10	9.82	-21.88	
0.00	0.00	0.00	0.00		22.94	11.81	0.33	-11.16	
YBADJ	STCK6	0.00	0.00		YBADJ	STCK10	-22.32	11.48	
0.00	0.00	0.00	0.00		7.76	3.02	-1.81	-6.58	
YBADJ	STCK6	0.00	0.00		YBADJ	STCK10	-11.16	-15.39	-
0.00	0.00	0.00	21.99		19.16	-22.35	-24.85	2.18	
YBADJ	STCK6	-3.43	0.00		YBADJ	STCK10	-21.51	-33.36	-
0.00	0.00	0.00	0.00		22.94	-11.81	-0.33	11.16	
YBADJ	STCK6	0.00	0.00		YBADJ	STCK10	22.32	-11.48	-
0.00	0.00	0.00	0.00		7.76	-3.02	1.81	6.58	
					YBADJ	STCK10	11.16	15.39	
YBADJ	STCK7	0.00	0.00		19.16	22.35	24.85	41.21	
0.00	0.00	0.00	0.00						

YBADJ	STCK11	-7.81	-2.87					
2.16	7.13	11.88	16.27		YBADJ	STCK15	0.00	0.00
YBADJ	STCK11	20.16	23.44		0.00	0.00	0.00	0.00
20.35	22.31	23.61	28.79		YBADJ	STCK15	0.00	0.00
YBADJ	STCK11	27.97	26.31		0.00	0.00	0.00	0.00
23.85	20.66	16.85	12.52		YBADJ	STCK15	0.00	0.00
YBADJ	STCK11	7.81	2.87	-	0.00	0.00	0.00	0.00
2.16	-7.13	-11.88	-16.27		YBADJ	STCK15	0.00	0.00
YBADJ	STCK11	-20.16	-23.44	-	0.00	0.00	0.00	0.00
20.35	-22.31	-23.61	-28.79		YBADJ	STCK15	0.00	0.00
YBADJ	STCK11	-27.97	-26.31	-	0.00	0.00	0.00	0.00
23.85	-20.66	-16.85	-12.52		YBADJ	STCK15	0.00	0.00
					0.00	0.00	0.00	0.00
YBADJ	STCK12	0.00	0.00					
0.00	0.00	6.23	1.48		YBADJ	STCK16	0.00	0.00
YBADJ	STCK12	-3.32	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	66.84		YBADJ	STCK16	0.00	0.00
YBADJ	STCK12	38.28	8.55	-	0.00	0.00	0.00	0.00
21.44	-50.78	-19.50	0.00		YBADJ	STCK16	0.00	0.00
YBADJ	STCK12	64.28	24.33	-	0.00	0.00	0.00	0.00
16.36	-56.55	-95.02	-130.60		YBADJ	STCK16	0.00	0.00
YBADJ	STCK12	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK16	0.00	0.00
YBADJ	STCK12	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK16	0.00	0.00
					0.00	0.00	0.00	0.00
YBADJ	STCK13	0.00	0.00					
0.00	0.00	0.00	0.00		YBADJ	STCK17	0.00	0.00
YBADJ	STCK13	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK17	0.00	0.00
YBADJ	STCK13	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK17	0.00	0.00
YBADJ	STCK13	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK17	0.00	0.00
YBADJ	STCK13	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK17	0.00	0.00
					0.00	0.00	0.00	0.00
YBADJ	STCK14	0.00	0.00					
0.00	0.00	0.00	0.00		YBADJ	STCK18	0.00	0.00
YBADJ	STCK14	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK18	0.00	0.00
YBADJ	STCK14	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK18	0.00	0.00
YBADJ	STCK14	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK18	0.00	0.00
YBADJ	STCK14	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00		YBADJ	STCK18	0.00	0.00
YBADJ	STCK14	0.00	0.00		0.00	0.00	0.00	0.00
0.00	0.00	0.00	0.00					

YBADJ	STCK18	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK19	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK20	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
YBADJ	STCK21	0.00	0.00
0.00	0.00	0.00	0.00
SRCGROUP	STCK1	STCK1	
SRCGROUP	STCK10	STCK10	
SRCGROUP	STCK11	STCK11	
SRCGROUP	STCK12	STCK12	
SRCGROUP	STCK13	STCK13	
SRCGROUP	STCK14	STCK14	
SRCGROUP	STCK15	STCK15	
SRCGROUP	STCK16	STCK16	
SRCGROUP	STCK17	STCK17	

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SRCGROUP STCK18   STCK18
SRCGROUP STCK19   STCK19
SRCGROUP STCK20   STCK20
SRCGROUP STCK21   STCK21
SRCGROUP STCK3    STCK3
SRCGROUP STCK4    STCK4
SRCGROUP STCK5    STCK5
SRCGROUP STCK6    STCK6
SRCGROUP STCK7    STCK7
SRCGROUP STCK8    STCK8
SRCGROUP STCK9    STCK9
SRCGROUP ALL
SO FINISHED
**
*****
****
** AERMOD Receptor Pathway
*****
****
**
**
RE STARTING
  INCLUDED GSP.rou
RE FINISHED
**
*****
****
** AERMOD Meteorology Pathway
*****
****
**
**
ME STARTING
  SURFFILE ..\6866_Run6a_6Feb2015.SFC
  PROFFILE ..\..\6866_Run6a_6Feb2015.PFL
  SURFDATA 0 2013
  UAIRDATA 54321 2013
  SITEDATA 1 2013
  PROFBASE 10.0 METERS
ME FINISHED
**
*****
****
** AERMOD Output Pathway
*****
****
**
**
OU STARTING
  RECTABLE ALLAVE 1ST
  RECTABLE 1 1ST

```

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POSTFILE 1 ALL UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK1 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK10 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK11 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK12 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK13 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK14 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK15 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK16 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK17 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK18 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK19 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK20 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK21 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK3 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK4 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK5 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK6 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK7 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK8 UNIFORM
GSP.AD\POSTPRO.POS 31
  POSTFILE 1 STCK9 UNIFORM
GSP.AD\POSTPRO.POS 31
** Auto-Generated Plotfiles
  PLOTFILE 1 ALL 1ST
GSP.AD\01H1GALL.PLT 52
  PLOTFILE 1 STCK1 1ST
GSP.AD\01H1G001.PLT 53
  PLOTFILE 1 STCK10 1ST
GSP.AD\01H1G002.PLT 54
  PLOTFILE 1 STCK11 1ST
GSP.AD\01H1G003.PLT 55

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PLOTFILE 1 STCK12 1ST
GSP.AD\01H1G004.PLT 56
  PLOTFILE 1 STCK13 1ST
GSP.AD\01H1G005.PLT 57
  PLOTFILE 1 STCK14 1ST
GSP.AD\01H1G006.PLT 58
  PLOTFILE 1 STCK15 1ST
GSP.AD\01H1G007.PLT 59
  PLOTFILE 1 STCK16 1ST
GSP.AD\01H1G008.PLT 60
  PLOTFILE 1 STCK17 1ST
GSP.AD\01H1G009.PLT 61
  PLOTFILE 1 STCK18 1ST
GSP.AD\01H1G010.PLT 62
  PLOTFILE 1 STCK19 1ST
GSP.AD\01H1G011.PLT 63
  PLOTFILE 1 STCK20 1ST
GSP.AD\01H1G012.PLT 64
  PLOTFILE 1 STCK21 1ST
GSP.AD\01H1G013.PLT 65
  PLOTFILE 1 STCK3 1ST
GSP.AD\01H1G014.PLT 66
  PLOTFILE 1 STCK4 1ST
GSP.AD\01H1G015.PLT 67
  PLOTFILE 1 STCK5 1ST
GSP.AD\01H1G016.PLT 68
  PLOTFILE 1 STCK6 1ST
GSP.AD\01H1G017.PLT 69
  PLOTFILE 1 STCK7 1ST
GSP.AD\01H1G018.PLT 70
  PLOTFILE 1 STCK8 1ST
GSP.AD\01H1G019.PLT 71
  PLOTFILE 1 STCK9 1ST
GSP.AD\01H1G020.PLT 72
OU FINISHED

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**
*****
****
** Project Parameters
*****
****
** PROJCTN  CoordinateSystemUTM
** DESCPTN  UTM: Universal Transverse
Mercator
** DATUM    World Geodetic System 1984
** DTMRGN   Global Definition
** UNITS    m
** ZONE     -50
** ZONEINX  0
**

```