

Annual Environmental Management Report 2021

InfraBuild Recycling, Hexham

21-Mar-2022
2021 AEMR
Commercial-in-Confidence

Annual Environmental Management Report 2021

InfraBuild Recycling, Hexham

Client: InfraBuild Recycling

Prepared by

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Glossary of Terms

AEMR	Annual Environmental Management Report
ANZG	Australian and New Zealand Governments and Australian State and territory Governments
AQMP	Air Quality Management Plan
DA	Development Application
DC	Development Consent
DIPNR	Department of Infrastructure Planning and Natural Resources
DPIE	Department of Planning, Industry and Environment (previously DIPNR, DP&E)
EIS	Environmental Impact Statement
EPA	Environmental Protection Authority
EPL	Environmental Protection Licence
IEA	Independent Environmental Audit
INP	Industrial Noise Policy
LOR	Limit of Reporting
OEMP	Operation Environmental Management Plan

1.0 Introduction

The 2021 Annual Environmental Management Report (AEMR) has been prepared by AECOM Australia Pty Ltd (AECOM) on behalf of InfraBuild Recycling (trading name for OneSteel Recycling Pty Ltd, formally Smorgon Steel Recycling) for the metal recycling facility located at 14 Sparke Street, Hexham NSW.

InfraBuild Recycling is required under Schedule 2, Condition 8.3 of the Development Consent (Integrated Development Application No.345-7-2003-i MOD-49-3-2005-i) to prepare an AEMR each year throughout the life of the project. Each report must outline the environmental compliance and performance of the metal recycling facility in relation to the conditions of the Development Consent (DC) and other licences and approvals issued for the facility.

Specifically, this AEMR provides details as required under Schedule 2, Condition 8.3 of the DC, which states:

The Applicant shall, throughout the life of the development, prepare and submit for the approval of the Director-General, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the development against the Operation Environmental Management Plan (refer to Condition 7.4 of this consent), the conditions of this consent and other licences and approvals relating to the development. The AEMR shall include, but not necessarily be limited to:

- a. details of compliance with the conditions of this consent*
- b. a comparison of the environmental impacts and performance predicted in those documents listed under condition 1.2 of this consent*
- c. details of any complaints received in relation to the operation, an overview of how these complaints were handled, and the results of any actions taken by the Applicant to address the complaint*
- d. results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person*
- e. a list of all occasions in the preceding twelve-month period when environmental performance goals for the development have not been achieved, indicating the reason for failure to meet goals and the action taken to prevent recurrence of that type of incident.*

The period of reporting covered by this AEMR is between 19 December 2020 and 18 December 2021, which corresponds to the reporting period for the Environment Protection Licence (EPL 5345) issued by the NSW EPA. It is noted that several EPL variations are relevant to this 12 month reporting period and these are detailed in **Section 1.2**.

This report also contains details of potential environmental targets and strategies for the following 12-month period, which take into account monitoring trends observed to date.

1.1 Facility Background

1.1.1 Overview of Operations

InfraBuild Recycling recycles ferrous and non-ferrous metals via shredding, separation and collection. The shredder process currently comprises a LYNXS 4900 kW TMR 270 * 270 Heavy Duty Scrap Shredder that includes an in-feed conveyor, entry conveyor, entry chute, shredder (hammer mill), discharge conveyor, drum magnet ferrous separator, picking conveyors, non-ferrous enrichment and separator. The shredder operates up to 11 hours per day (7am to 6pm) and on Saturdays when required.

1.1.2 Site Location and Development Consent Boundary

The InfraBuild recycling Hexham facility is located at 14 Sparke St Hexham as shown in **Figure 1**. The site is located in approximately 10 kilometres northwest of Newcastle bounded by the Main Northern Railway line to the west, Maitland Road (the Pacific Highway) and the Hunter River to the east and Ironbark Creek to the south. The residential areas of St Joseph's Retirement Community and Shamrock Street Hexham are located approximately 500 metres southeast and north respectively from the site.

Figure 2 shows the extent of the Development Consent boundary which is also the extent of the disturbance footprint.



Figure 1 Site Location



Figure 2 Development Consent Boundary (Disturbance Footprint)

1.2 Scope of Annual Environmental Management Report

The AEMR describes the environmental compliance and performance of InfraBuild Recycling compared to DC conditions (**Appendix A**), predicted outcomes in the DA process, the EPL (**Appendix B**), the OEMP (**Appendix C**) and, where conditions are not specified, appropriate NSW or national guidelines. The documents of reference are as follows:

- SMEC Australia Ltd, July 2003, Metal Shredding Facility at Hexham NSW - Environmental Impact Statement (Volumes 1, 2 and 3) ("the EIS");
- InfraBuild Recycling Hexham, 2021, *Operational Environmental Management Plan*, InfraBuild Recycling Hexham NSW;
- NSW Government, Department of Infrastructure, Planning and Natural Resources, *The conditions of Development Consent* (File No. S03/00986), NSW Government, Sydney; and
- NSW Environment Protection Authority, OneSteel Recycling Pty Limited, *Hexham NSW, Environment Protection License No. 5345*, Licence Variation Notice numbers:
 - Variation 1600771 (27 November 2020); and
 - Variation 1609187 (7 October 2021).

Details of the 7 October licence amendments are provided in the letter preceding the licence in **Appendix B**. It is noted that the EPL has again been amended on 4 February 2022 however this amendment falls outside this reporting period and as such is not relevant to this report.

2.0 Compliance Review

2.1 Corrective Action Plan Summary

As reported in the 2020 AEMR, actions from the 2017 IEA (Coffey Corporate Services Pty Ltd - 6 June 2017) were closed out by InfraBuild when the Action Plan was updated on 23 November 2020.

A detailed assessment of the compliance of the facility in relation to the conditions of the DC and the EPL was again undertaken during the most recent Independent Environmental Audit (AQUAS Pty Ltd - 17 December 2020).

The AQUAS 2020 Audit report detailing compliance is provided as **Appendix D** with a list of associated actions (completed) detailed in the April 2021 update of the Action Plan provided in **Appendix E**. It is noted that all actions were closed out within this reporting period.

2.2 Summary of Non-Compliances

Noting that all corrective actions following the December 2020 IEA have been closed out, **Table 1** provides a summary of the non-compliances for this reporting period.

Table 1 Summary of Non-Compliances (19 December 2020 to 18 December 2021)

Condition	Type of Non-Compliance	Number of times Occurred
EPL Licence Condition M2.2	Monthly monitoring at discharge points 4 and 5 not carried out as per Licence requirements (as stated in annual return summary).	3 (Oct, Nov and Dec 2021) following the introduction of monthly water monitoring requirements into the EPL.

The following information was provided in the Sites Annual Return regarding this non-compliance:

Cause of non-compliance:

- Site was not aware that a grab sample included taking a sample from the ground using a syringe to fill sample bottles.

Action taken or that will be taken to mitigate any adverse effects of the non-compliance:

- Drip trays placed under geotextile bags (to facilitate sampling).

Action taken or that will be taken to prevent a recurrence of the non-compliance:

- Engagement of Environmental contractor to collect future samples.

It is noted that this appraisal of compliance with regulatory requirements relates only to environmental performance.

3.0 Complaints

In accordance with Schedule 2, condition 6.3 of the DC, InfraBuild Recycling maintained a Complaints Register throughout the reporting period to record details of all complaints received regarding the Hexham facility. There were no complaints recorded in the register over the reporting period 19 December 2020 to 18 December 2021.

A summary of complaints with a breakdown by type for the current year and the previous five years is provided in **Table 2**.

Table 2 Complaints Summary

Year	Total Number	Air Quality	Noise	Odour	Stormwater
2017	2	-	1	-	1
2018	0	-	-	-	-
2019	3**	3	-	2	-
2020	0	-	-	-	-
2021	0	-	-	-	-

*All odour complaints from same complainant

** Total of 3 complaints

No complaints have been recorded for 2021, 2020 or 2018. During 2019 the complaints related to air quality and odour whereas 2017 complaints were in regard to noise and stormwater. Overall, the total number of complaints each year has been relatively low with complaints generally trending lower since 2017.

4.0 Monitoring Results

InfraBuild Recycling conducts a comprehensive environmental monitoring program consisting of water, noise, air quality and meteorological monitoring. The following parameters were monitored over the reporting period for the facility in accordance with the conditions of the DC, the site EPL or for InfraBuild Recycling's corporate due diligence purposes.

- EPL 5345 compliance noise emissions monitoring (any residence in Shamrock Street, St. Joseph's Retirement Village and any associated residence in Old Maitland Road, and any operating industrial premises affected by noise):
 - $L_{Aeq}(15 \text{ minute})$ noise.
- EPL 5345 compliance stack emission testing (one location; shredder bag house):
 - lead
 - mercury
 - total solid particulate
 - fine particulate (PM_{10}).
- EPL 5345 compliance meteorological monitoring (one location; InfraBuild Recycling Hexham facility):
 - rainfall
 - wind speed at 10 metres
 - wind direction at 10 metres
 - temperature at 10 metres
 - temperature at 2 metres
 - sigma theta at 10 metres.
- Due diligence ambient air quality monitoring performed monthly at six locations (five locations; DG1 to DG4 and DG6 within InfraBuild Recycling facility boundary and DG5 located near residences at 37 Old Maitland Road, Hexham). Monitoring is performed in line with the Site Air Quality Management Plan (AQMP) provided in **Appendix F**. Analysis performed includes:
 - total insoluble matter
 - combustible matter
 - ash content.
- Water quality monitoring was performed over three discharge events during this reporting period in line with the Sites Surface Water Mitigation and Monitoring Plan (AECOM 2020), attached as **Appendix G**. On each occasion samples were collected from four sampling locations and analysed for a range of pollutants. The results of this sampling are provided attached in **Appendix H**. Following the EPA's review of the Site's plan, a surface water monitoring program was formalised in the October 2021 EPL revision. Analysis required by the Surface Water Mitigation and Monitoring Plan is as follows:

- TRH	- pH
- BTEX	- Electrical Conductivity
- PAH's	- Oil and Grease
- Glycols	- Ca, K, Mg, Na
- Total Suspended	- Nutrients (Nitrogen, Phosphorus, Nitrate + Nitrate, Kjeldahl
- Turbidity	- Dissolved and total heavy metals and metalloids (i.e. Aluminium, Arsenic, Boron, Cadmium, Chromium VI, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel)

4.1 Noise and Overpressure/Vibration Monitoring

4.1.1 Noise Monitoring

Under EPL 5345, Condition M7.2, InfraBuild Recycling is required to conduct quarterly noise compliance assessments.

Noise assessment criteria are detailed in EPL Condition L4 and are presented in **Table 3**.

Table 3 EPL Noise Limits for InfraBuild Recycling

Location	Noise Limit dB(A)			
	Day	Evening	Night	
	L _{Aeq} (15min)	L _{Aeq} (15min)	L _{Aeq} (15min)	L _{A1} (1min)
Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55
St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56
Any operating industrial premises affected by noise from the premises	70	70	70	N/A

Attended surveys conducted to assess the noise impact of operations from the InfraBuild Recycling, Hexham facility were performed by AECOM for the quarter 1, 2, 3 and 4 monitoring periods.

The results of these surveys were consistently influenced by extraneous noise, predominately consisting of:

- Freight and passenger trains
- Heavy trucks and traffic on Maitland Road (Pacific Highway)
- Birds and crickets.

Where direct measurement of noise contribution from an industrial facility is not possible due to persistent extraneous noise sources, the Environment Protection Authority's NSW Industrial Noise Policy (INP) makes an allowance for assessment by other methods. Section 11.1.2 of the policy states:

"When compliance is being measured it may be found that, in many cases, existing noise levels are higher than noise level from the source, making it difficult to separate out the source noise level. When this happens, it may not be feasible to measure compliance at the specified location, and other methods will be needed. In these cases, measurements may be taken closer to the source and then calculated back to the specified location."

Therefore, for each quarter as per L4.2 of InfraBuild Recycling's EPL and Section 11.1.2 *Notes on noise monitoring* of the Environment Protection Authority's NSW Industrial Noise Policy (INP); attended noise monitoring at the northwest and southeast boundaries of the InfraBuild Recycling site was conducted in order for results to be calculated at the Shamrock St and Calvary St Joseph's Retirement Community locations.

Measurements were conducted during daytime operation of the site, with trucks, excavators and the shredder operating on site along with monitoring of noise levels during evening and night times.

For each receiver location the predicted noise levels from the InfraBuild Recycling facility were estimated using a 'flat ground' model based on hemispherical spreading, conservatively assuming no topographical shielding, directivity or meteorological effects over 70% soft ground.

Quarterly monitoring was conducted on the following dates:

- 25 March representing quarter 1
- 22 June representing quarter 2
- 22 September representing quarter 3
- 17 November representing quarter 4.

Predicted noise levels for the receiver locations are presented in **Table 4** and **Table 5**.

Table 4 Calculated Noise Levels at R1 Shamrock Street Hexham

Time	Calculated noise level dB(A)				EPL noise limit, dB(A)
	Q1	Q2	Q3	Q4	
Day	48*	48*	48*	45	47
Evening	<30	<30	<30	<30	48
Night	<30	<30	<30	<30	45

* Measurement is compliant with (within 2 dB) the EPL criterion (Noise Policy for Industry (NPI)).

Table 5 Calculated Noise Levels at R2 - Calvary St Joseph's Retirement Community

Time	Calculated noise level dB(A)				EPL noise limit, dB(A)
	Q1	Q2	Q3	Q4	
Day	46	37	35	42	53
Evening	<30	37	32	<30	42
Night	<30	33	32	<30	41

A review of the InfraBuild Recycling noise monitoring data reveals the following:

- Ambient noise levels above the EPL L_{Aeq} limits were measured at the majority of the designated EPL receptors during the daytime, evening and night periods.
- It was noted that extraneous noise sources such vehicle traffic (including heavy trucks) along Maitland Road as well as freight and passenger train noise from the nearby Hunter Railway Line contributed significantly to these noise levels.
- Calculated and/or measured receiver noise levels were within relevant EPL criteria at all sites and times.

Further review of noise monitoring is provided in **Section 5.1**.

4.1.2 Overpressure and Vibration Monitoring

Under the EPL No. 5345, Condition M7.1, InfraBuild Recycling is required to ensure that suitable instrumentation is maintained and operated in compliance with AS 2187.2(1993) (superseded in 2006), to monitor overpressure and vibration caused by explosions on the premises.

Monitoring of overpressure & vibration is conducted to determine the impact of operations at the InfraBuild Recycling Hexham facility. There were no blasts measured during the time periods that the monitoring equipment was operational for the 2021 reporting period.

4.2 Stack Emissions

Under EPL 5345, InfraBuild Recycling is required to conduct quarterly monitoring of emissions from the Baghouse Stack as per Condition M3 of EPL 5345.

Stack emissions testing during 2021 was performed by AECOM Australia (NATA accreditation No. 2778 (14391)) (Quarter 1 only) and Port Hunter Environmental (pHE) (Quarters 2 and 3). As part of the 7 October EPL variation, the frequency of the stack emissions monitoring was reduced from Quarterly to Annually. For this reason, no stack emissions testing was performed during Q4 2021.

Samples were analysed by ALS (NATA Accreditation number 825) and SGS (NATA accreditation number 14429).

2021 quarterly stack emissions monitoring was conducted on the following dates with results detailed in **Table 6**.

- 9 April representing quarter 1
- 3 June representing quarter 2
- 10 August representing quarter 3.

Q1 sampling was attempted on 26 and 29 March however on both occasions unscheduled plant downtime prevented testing being completed.

Table 6 Emission Measurement Results

Parameter	Emission Concentration (mg/m ³)			Regulatory Limit (mg/m ³)
	Q1	Q2	Q3	
Total Particulate (TP)	5.8	0.89	14	100
Fine Particulate (PM ₁₀)	0.77	1.2	<0.10	NA
Lead	0.0028	0.0045	0.001	5.0
Mercury	0.000043	0.00004	0.00008	1.0
Total Hazardous Substances (Metals)	0.087	0.24	0.0022	NA

Note: No Q4 testing following EPL frequency being reduced to annual in October 2021

The InfraBuild Recycling stack emission monitoring results for 2021 indicate the following:

- Total Particulate, Lead and Mercury concentrations were below their respective regulatory limits as stipulated in the site's EPL for each sampling event.

Further review of air emission performance is given in **Section 5.2**.

4.3 Ambient Air

As part of InfraBuild Recycling's due diligence program, an ambient air quality monitoring network has been established. The network consists of six dust deposition gauges (DG1 to DG6) positioned to enable an evaluation of air quality along the dominant northwest-southeast wind axis. Dust deposition gauges were installed in accordance with *AS 3580.1.1 (2007)* with monitoring performed on a monthly basis from January 2021 onwards. The location of dust deposition gauges is shown in **Figure 3** below.



Figure 3 InfraBuild Recycling Depositional Dust Gauge Sampling Locations

The purpose of this monitoring program is to assess the air quality at residences and compare the results to ambient air quality at the facility. It is also designed to characterise the dust fallout in the vicinity of the plant. Monitoring is conducted in accordance with *AS 3580.10.1(2016)*. Samples were collected over an exposure period of one month (30 ± 2 days) on a monthly basis.

The EPA guideline value for insoluble solids of $4 \text{ g/m}^2 \cdot \text{month}$ is expressed as an annual average.

Samples were analysed by a NATA-certified laboratory (ALS Laboratory Group) for the following parameters:

- total insoluble matter
- ash residue
- combustible matter.

Dust deposition monitoring results including annual averages for each monitoring location are detailed below in **Table 7**.

Table 7 Depositional Dust Gauge Insoluble Solids Results

Month	DG1	DG2	DG3	DG4	DG5	DG6
January 21	6.8	6.7	2.9	1.4	1.1	1.1
February 21	9.4	7.5	4.7	1.1	0.7	0.7
March 21	2.6	2.7	3.0	0.9	0.6	0.6
April 21	5.3	3.7	7.4	4.2	1.1	1.2
May 21	3.4	2.3	6.8	5.1	0.4	0.8
June 21	1.0	2.0	7.8	0.6	2.6	0.6
July 21	1.7	3.0	8.8	3.8	0.9	0.7
August 21	1.4	2.3	6.2	3.6	1.2	1.1
September 21	3.3	3.6	8.9	2.3	1.0	1.0
October 21	2.4	3.7	7.0	3.0	0.8	1.1
November 21	2.3	1.3	4.8	1.1	0.5	4.7
December 21	4.3	3.6	4.0	1.4	1.1	1.5
Annual Average	3.7	3.5	6.0	2.4	1.0	1.3

Dust gauges, with the exception of DG5, are located on site (refer **Figure 3**) and provide an indication of on-site dust deposition only. These gauges have the potential to be impacted heavily by on site activities carried out in close proximity to the sampling locations. The results from these gauges therefore do not reflect the impact at the nearest receptor and should not be used as a measure of dust deposition at the nearest offsite receptor.

Dust gauge DG5 is located within the nearest neighbour's property (St Joseph's Retirement Village on Old Maitland Rd, Sandgate) which is the nearest off-site receptor and is considered to provide a representative background sample. InfraBuild Recycling therefore believes that only results from DG5 should be assessed against the guideline value. Monthly results for DG5 are all below the 4 g/m².month guideline with the 12-month average at this location to December 2021 being 1.0 g/m².month.

Monthly results are shown plotted in **Figure 4** while annual average deposition rates are shown in **Figure 5**. It should be noted that annual averages prior to March 2021 do not contain a full 12 months of data. Annual averages for all monitoring locations have shown either a decreasing trend or have remained relatively constant since January 2021.

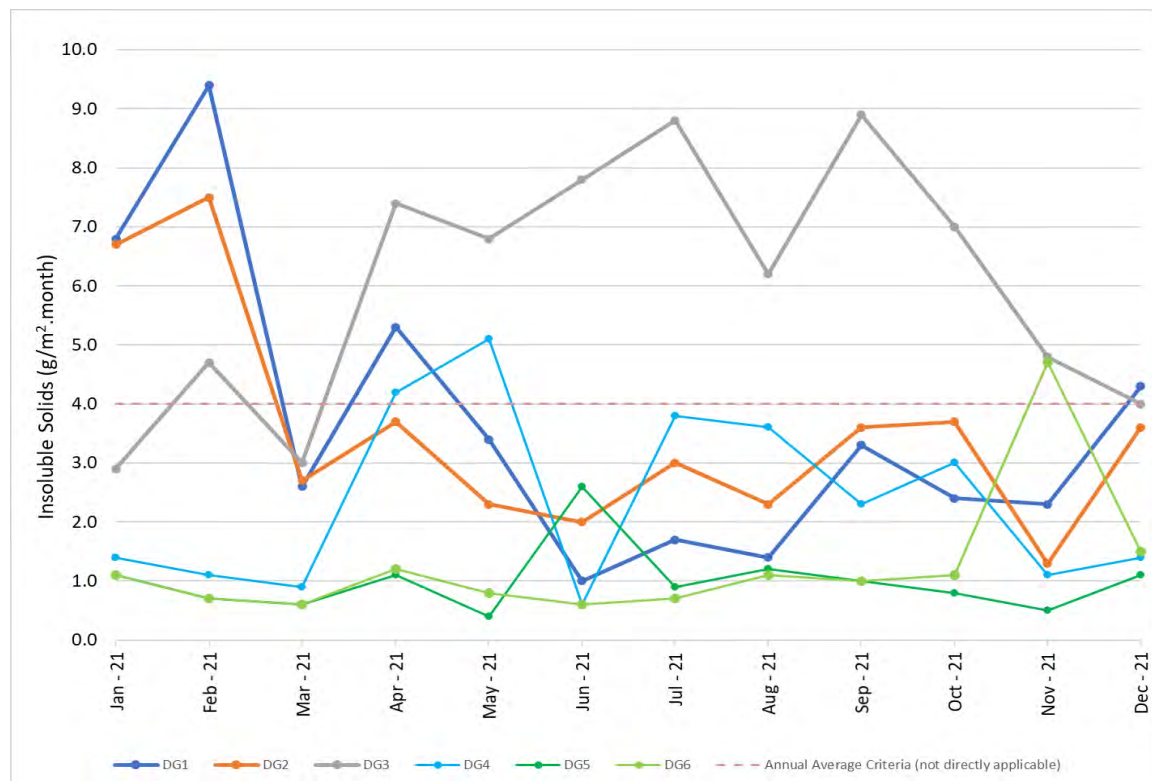


Figure 4 Dust Deposition – Insoluble Solids Monthly Results

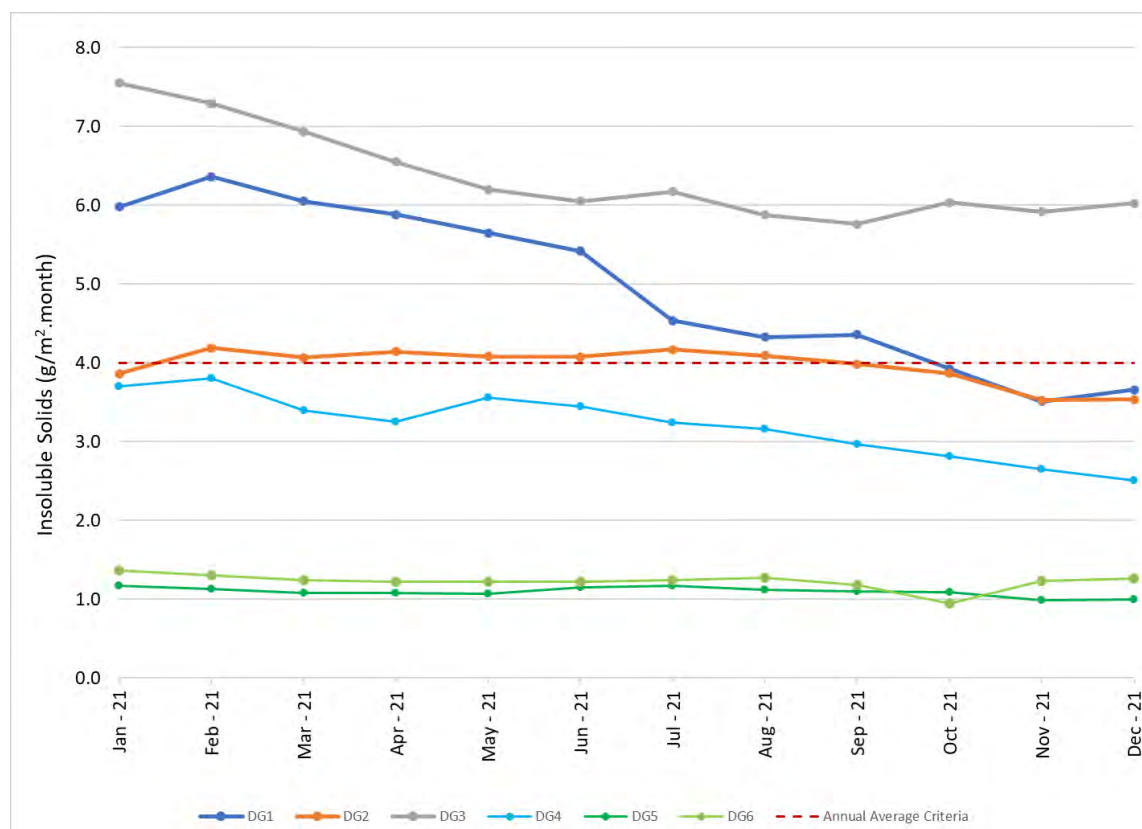


Figure 5 Dust Deposition - Insoluble Solids Rolling Averages

4.4 Surface Water Quality Monitoring

Water quality monitoring was performed over three discharge events during this reporting period in line with the Sites Surface Water Mitigation and Monitoring Plan (AECOM 2020). Sampling was performed on 24 March, 27 August and 12 October 2021. On each occasion samples were collected from four sampling locations identified in **Figure 6** and analysed for a range of pollutants. The results of this sampling are provided attached in **Appendix G**.



Figure 6 Surface Water Quality Monitoring Locations

4.5 Meteorology

Under EPL 5345, Condition M4.1 specifies requirements for the meteorological monitoring. InfraBuild Recycling conducted meteorological monitoring during the reporting period as required.

Rainfall and temperature (at 10m) data for the 2021 reporting period are provided in **Figure 7**. Monthly wind roses presenting wind speed and wind direction for the reporting period are shown in **Figure 8** to **Figure 14**. Where no site data exists, data has been sourced from the DPIE Mayfield West station where data is publicly available.

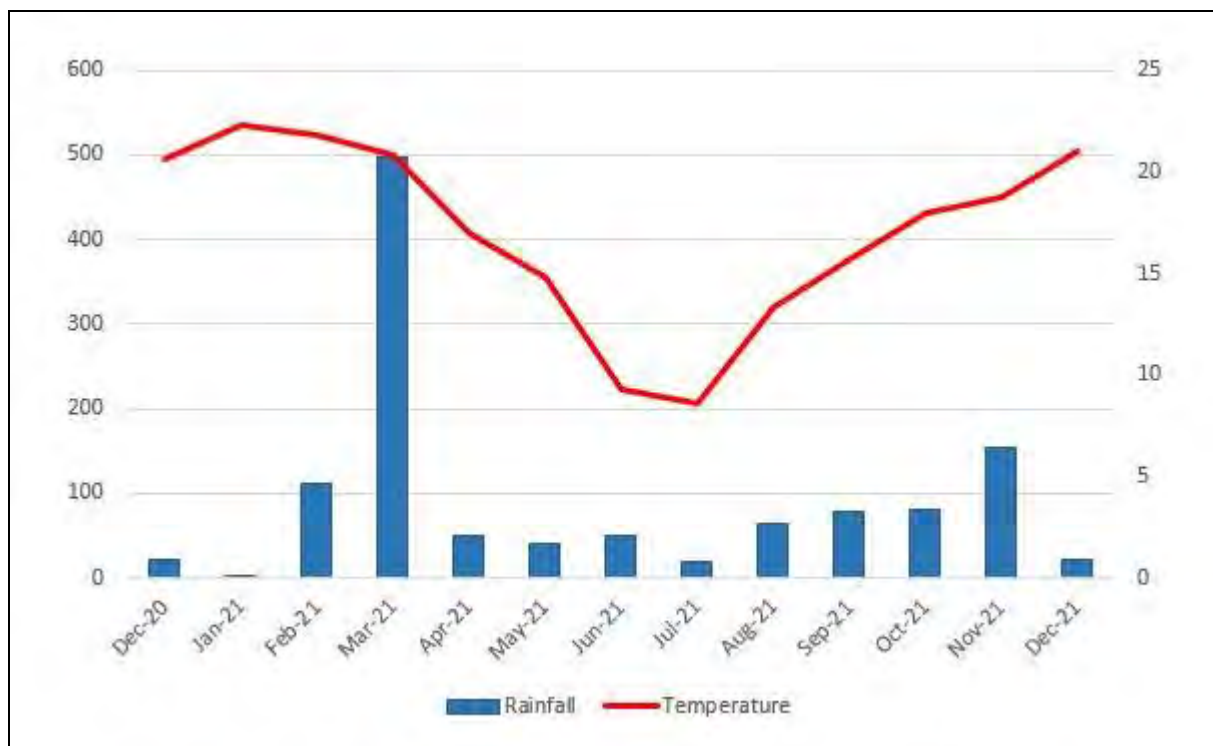


Figure 7 Monthly Rainfall and Temperature Data (19 December 2020 – 18 December 2021)

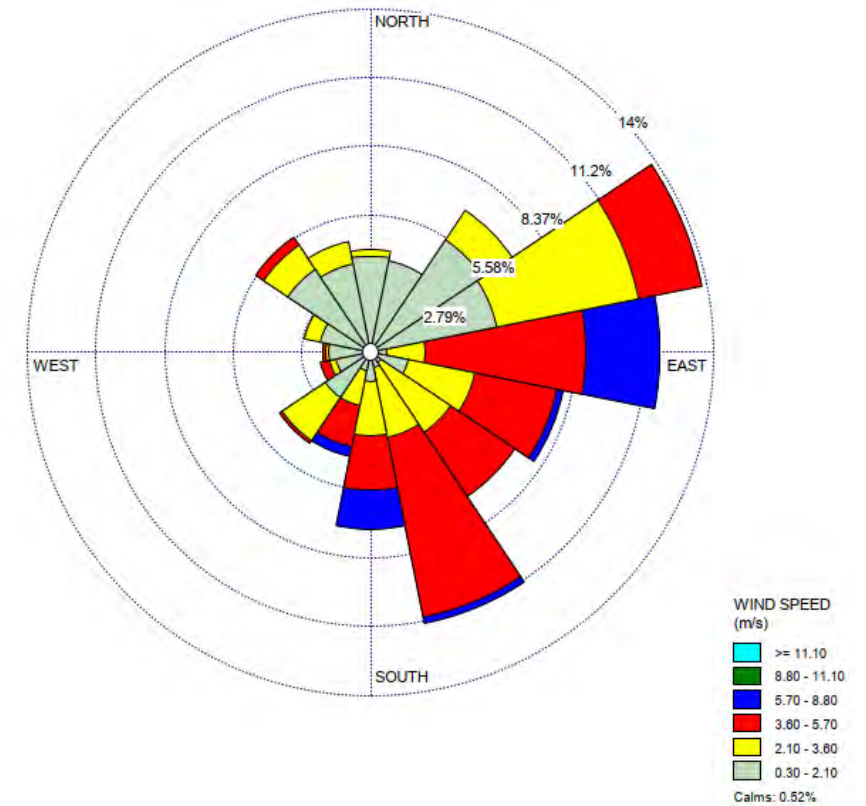
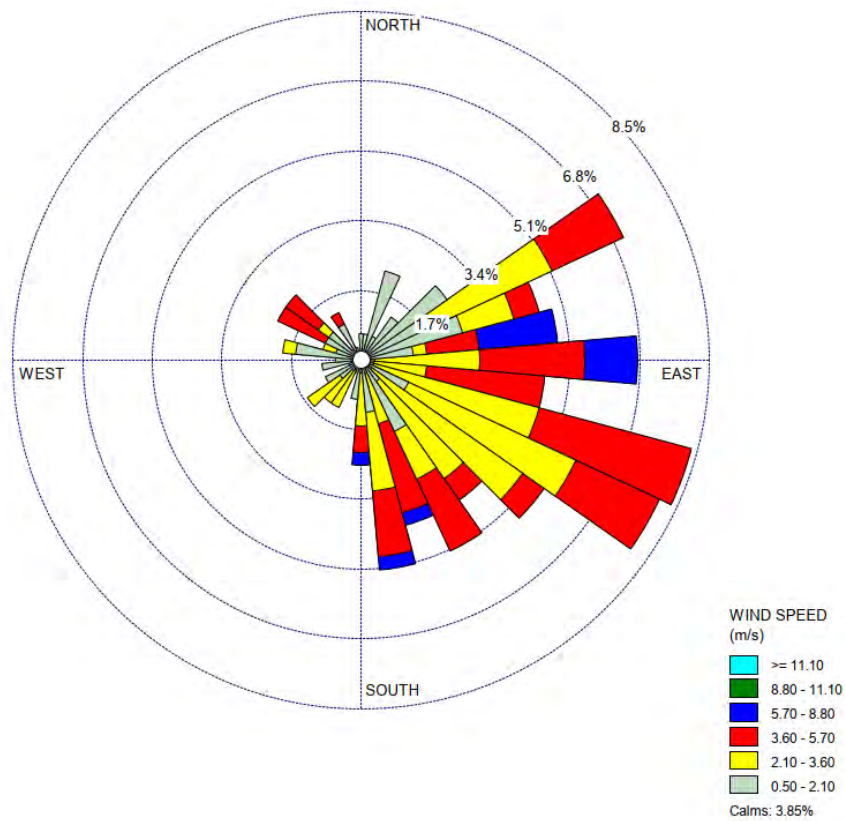


Figure 8 Wind Speed and Wind Direction (December 2020 (19th to 31st) and January 2021)

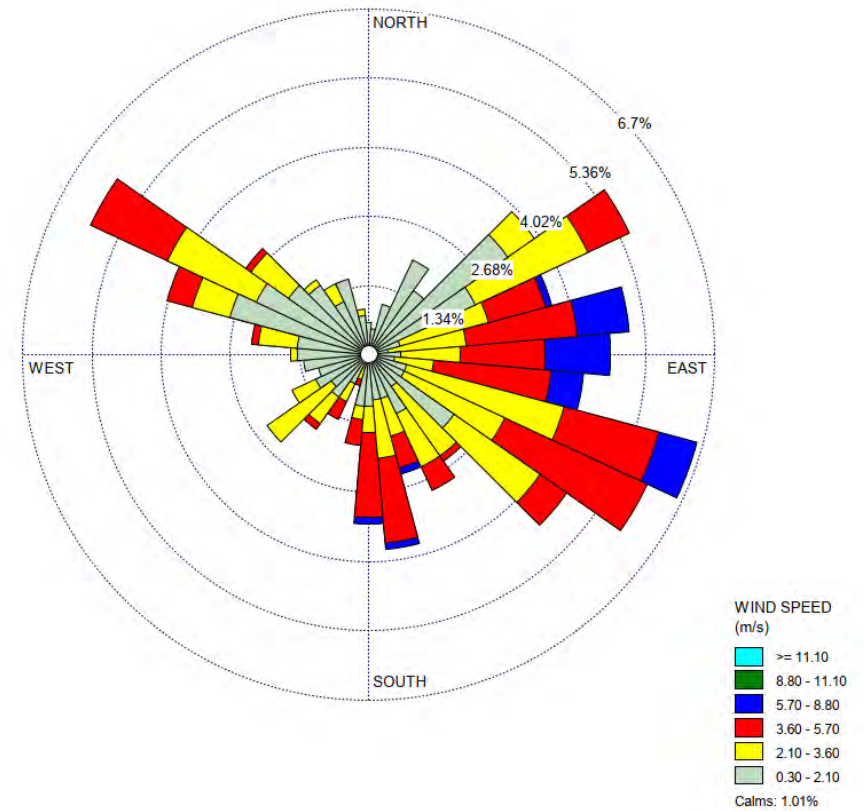
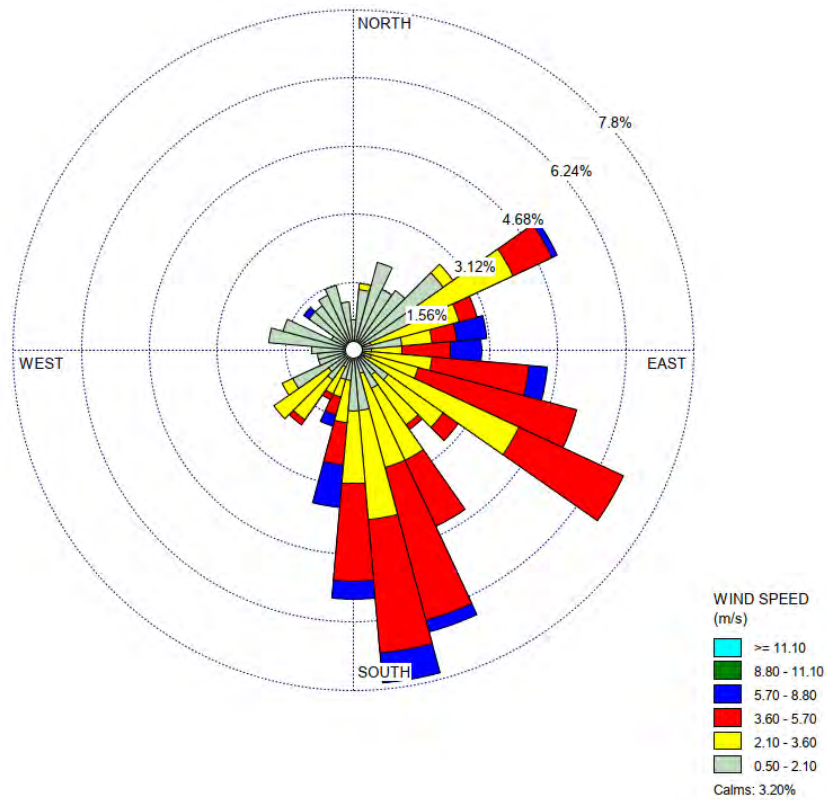


Figure 9 Wind Speed and Wind Direction (February 2021 and March 2021)

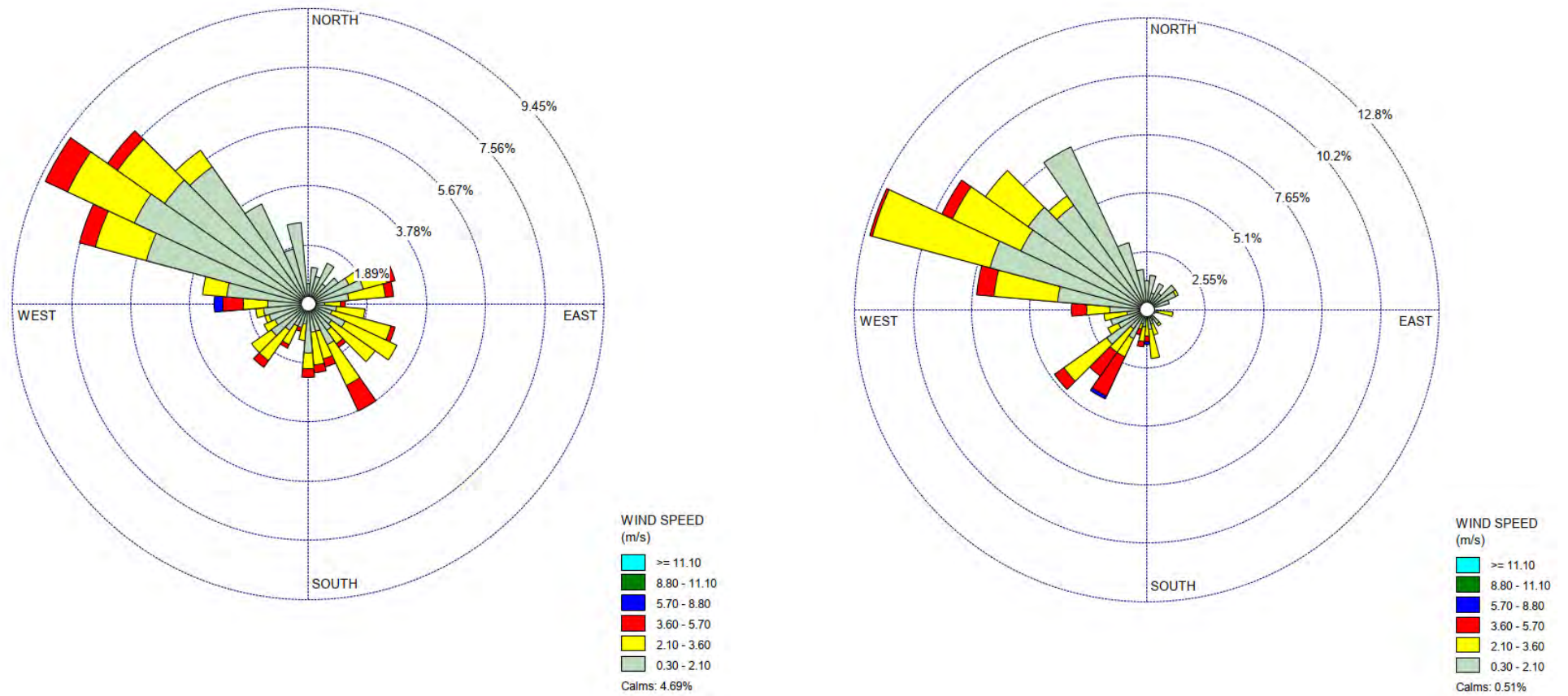


Figure 10 Wind Speed and Wind Direction (April 2021 and May 2021)

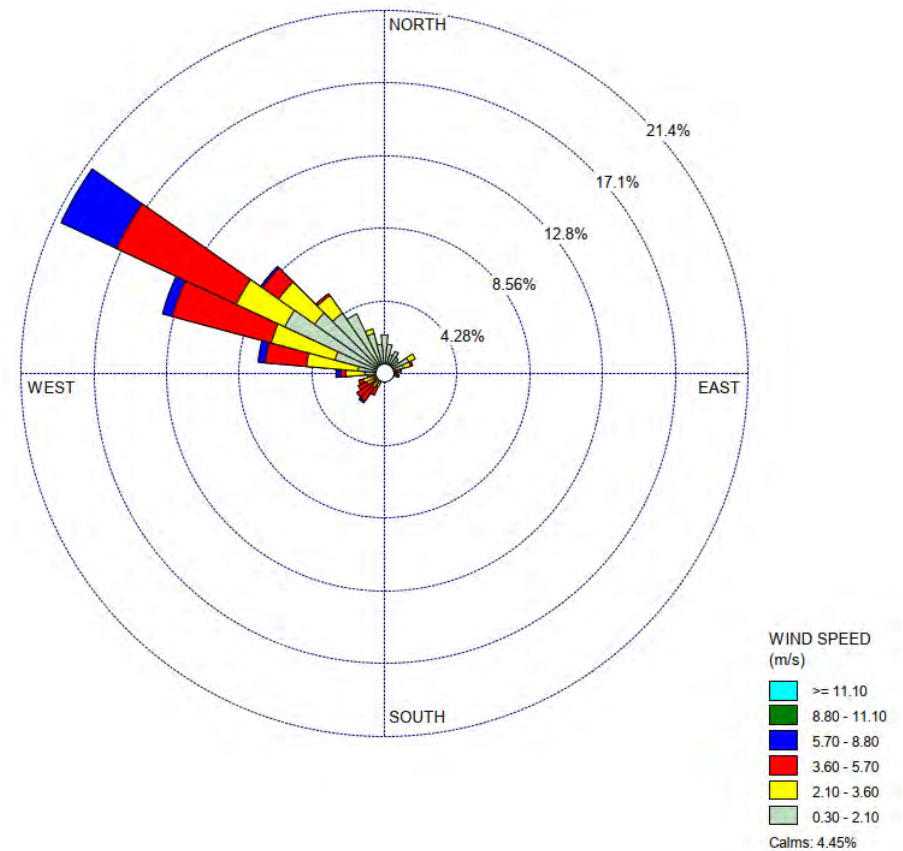
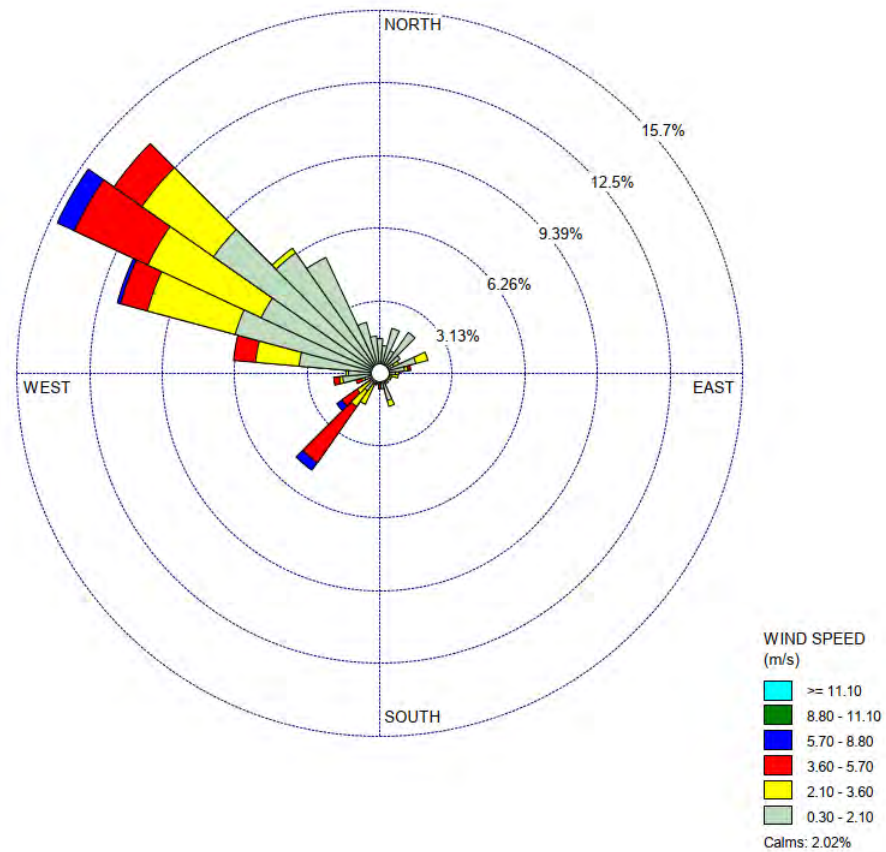


Figure 11 Wind Speed and Wind Direction (June 2021 and July 2021)

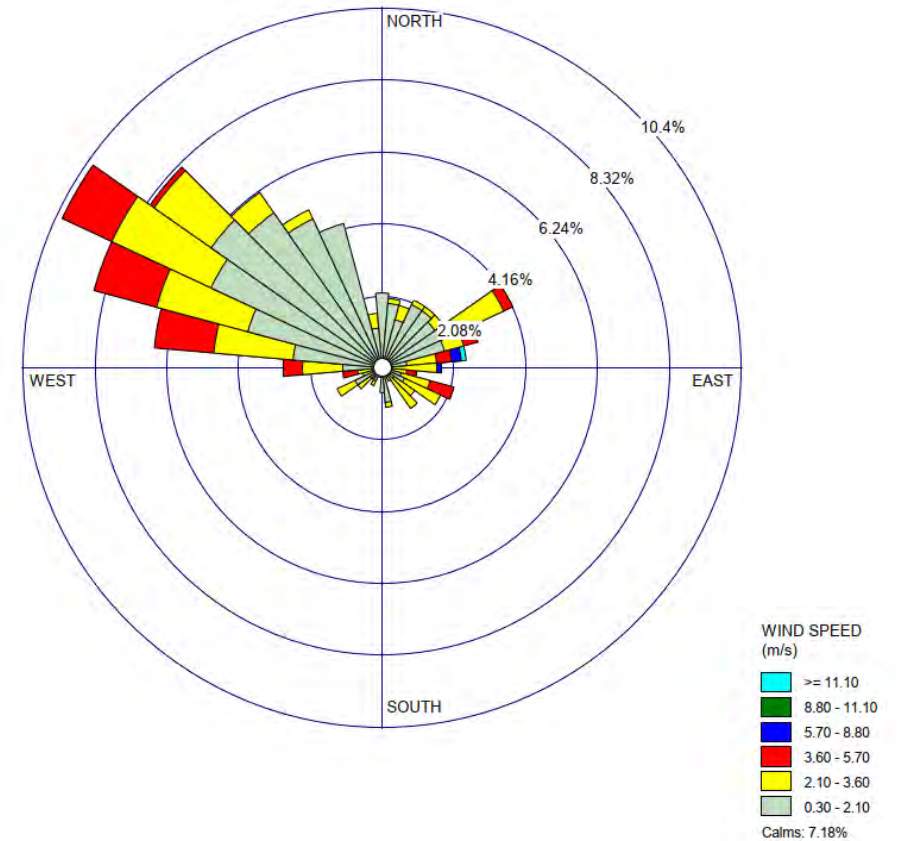
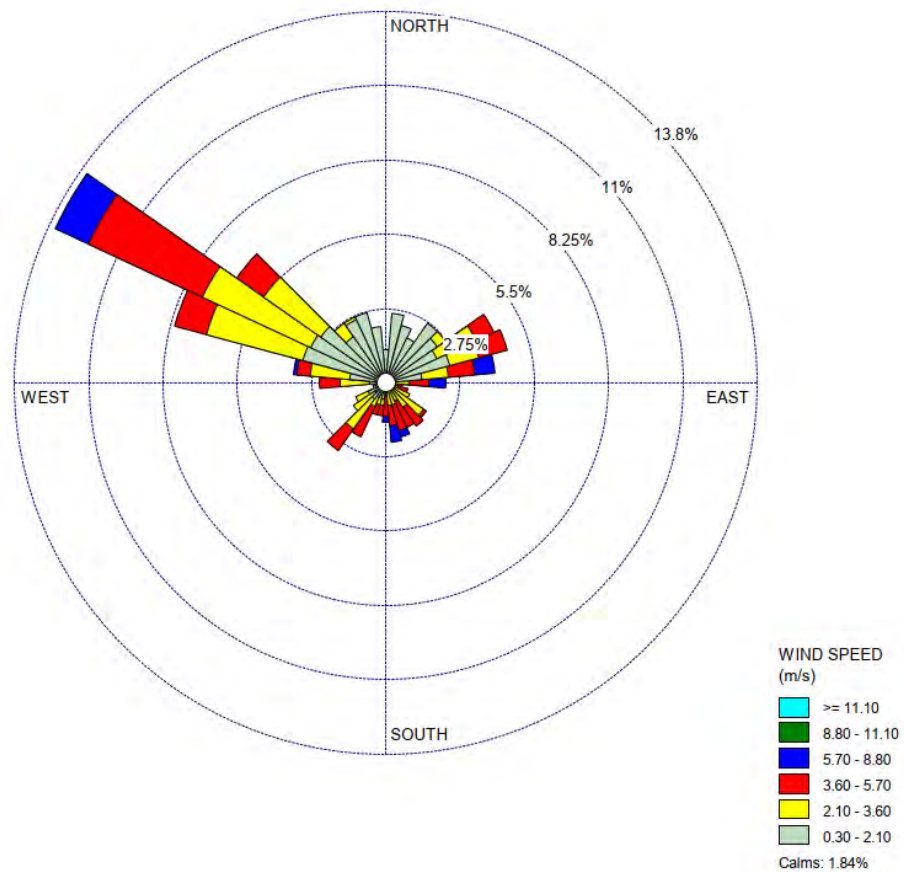


Figure 12 Wind Speed and Wind Direction (August 2021 and September 2021)

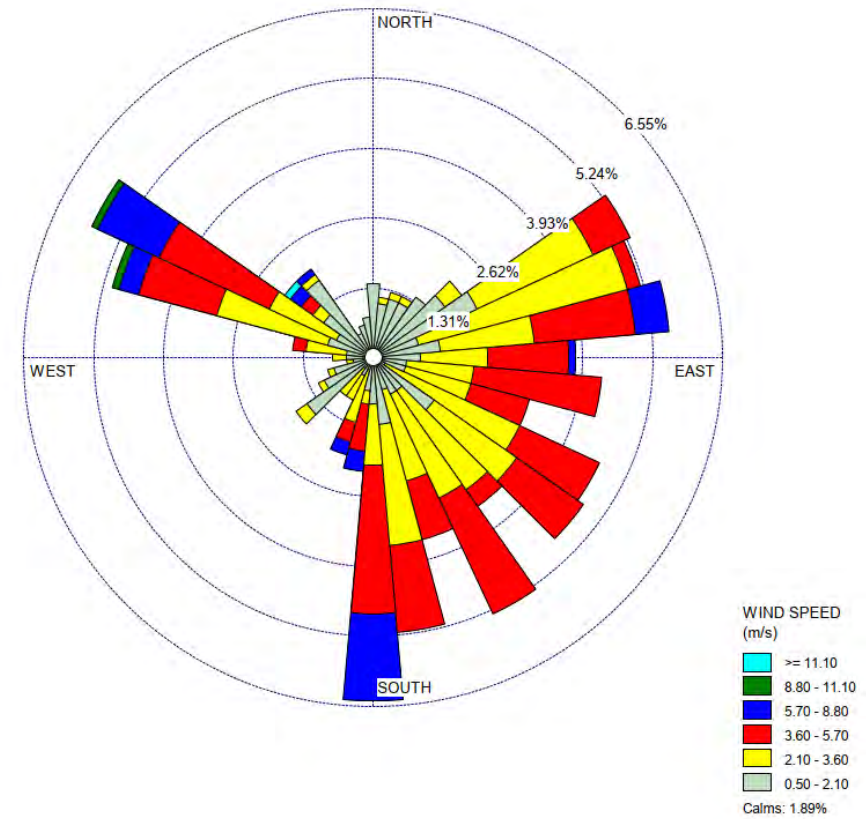
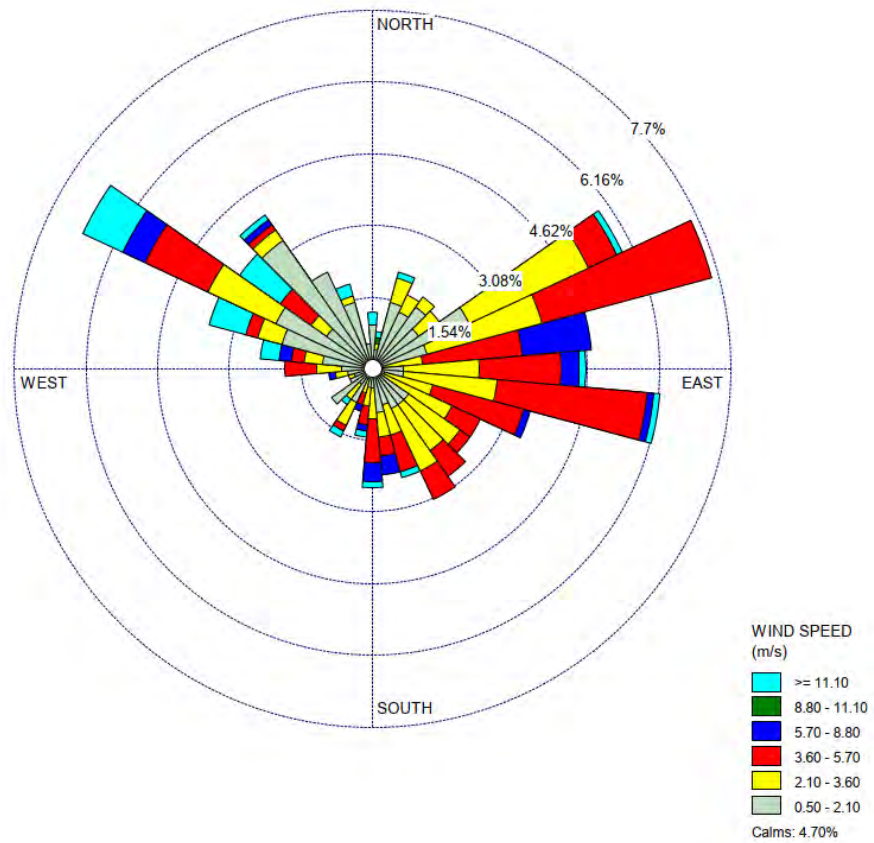


Figure 13 Wind Speed and Wind Direction (October 2021 and November 2021)

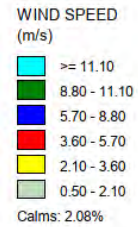


Figure 14 Wind Speed and Wind Direction (December 2021– 1st to 18th)

Review of the monthly wind roses reveals the following typical seasonal pattern:

- December 2019, January and February are dominated by Easterly and South Easterly winds.
- March winds are predominately from the South East quadrant with a component of north westerly winds.
- Winds from April to September are dominated by North Westerly winds.
- October and November winds are variable with predominantly winds from the East, South and North West.
- December 2020 winds are largely from the South East quadrant.

Further comments regarding meteorological monitoring are made in **Section 5.3**.

5.0 Environmental Impacts and Performance

The predicted environmental impacts specified in the EIS were used as a guide for the assessment of environmental impacts and performance of the facility. As such, the assessment is limited to ambient air, stormwater quality, stack emissions and noise performance.

A summary of conformance with predictions made in approval documents is provided in **Appendix D**.

5.1 Noise and Overpressure/Vibration Monitoring

The InfraBuild Recycling EPL Condition M7.2 specifies that quarterly noise monitoring is required to ensure compliance with condition L4.1 regarding noise limits around the site. InfraBuild Recycling is required to supply a quarterly noise compliance assessment report to be submitted in conjunction with the annual return document, in compliance with EPL condition R3.5. Quarterly monitoring was performed by AECOM in March, June, September and November 2021, representing the first, second, third and fourth quarters respectively. Monitoring was conducted at St. Joseph's Retirement Village and Shamrock St. during daytime, evening and night time periods as per EPL requirements.

Ambient noise levels at the two EPL receptors, for the majority of the time, have been found to be dominated by sources external to site operations. Major external noise contributions which have been recorded include:

- light and heavy vehicles travelling along Maitland Road
- passenger and freight trains travelling along the Main Northern Railway line
- noise from the natural environment, predominantly from crickets, frogs and birds.

The impact from these external sources makes it difficult to directly measure the noise contribution of the facility at the nominated monitoring locations. An alternative method of determining compliance, in accordance with the NSW EPA Industrial Noise Policy (INP), was conducted during each quarter. This alternate method utilises site boundary measurements to predict noise levels at each receptor location. The resulting predicted noise levels indicated compliance with the EPA noise limits at both EPL locations, demonstrating compliance with EPL conditions for all quarter periods.

InfraBuild Recycling Hexham provided suitable instrumentation that was maintained and operated in compliance with AS 2187.2 (1993) (superseded in 2006) to monitor overpressure & vibration caused by explosions on the premises. No blasts were recorded during this reporting period.

5.2 Stack Emissions

Prior to the 7 October 2021 EPL variation, Condition M2.2 of the InfraBuild Recycling EPL specified that stack emissions for key pollutants be monitored on a quarterly basis. The October 2021 EPL was amended to an annual requirement and became Condition M2.4.

Monitoring during the 2021 period was performed by AECOM (quarter 1) and AECOM subcontracted to Port Hunter Environmental (quarter 2, and 3) with samples analysed by Australian Laboratory Services and SGS Australia for all monitoring rounds.

Quarterly total particulates, lead and mercury stack emission test results were below their respective EPL limits.

5.3 Meteorology

Condition M4 of the InfraBuild Recycling EPL specifies monitoring requirements for meteorological parameters. Monthly trend graphs for rainfall and temperature, along with wind roses depicting wind direction and wind speed are provided in **Section 4.5, Figure 7 to Figure 14**.

Meteorological monitoring is used to assist in assessing other environmental monitoring results. During the 2021 reporting period some meteorological sensors experienced data capture issues. During these periods missing or invalid data has been substituted with meteorological data sourced from DPIE station in Mayfield West.

5.4 Ambient Air

The InfraBuild Recycling EIS does not make predictions regarding ambient air quality. It identified traffic and other industrial facilities nearby which may impact on the local ambient air quality.

The 2021 due diligence dust deposition monitoring program was performed on behalf of InfraBuild Recycling by AECOM on a monthly basis between January and December 2021.

Results from the five onsite sampling locations returned fluctuating monthly results, with DG3 frequently returning the highest deposition. Annual averages for the five onsite locations trended lower over 2021.

Results from dust gauge DG5, located off site at the nearest residential receptor in Old Maitland Rd, Sandgate, show that the levels recorded at the nearest receptor are well below the EPA annual average criteria of 4g/m².month for insoluble solids.

The Dust Mitigation Study and Report (EPL Condition G2.1, Completed PRS 7 (Sep 2019)), which assessed site processes and identified existing dust sources, established an emissions inventory, identified and reviewed mitigation options and provided an assessment of the feasibility of these options. A number of these recommendations were implemented during the 2021 reporting period with details available in the AQMP attached as **Appendix F**.

One of these recommendations was that dust deposition monitoring be conducted on a continuous monthly basis, which continues to occur. Results over this period are generally trending lower (**Figure 4** and **Figure 5**) suggesting the mitigation measures are effective in reducing dust emissions.

EPL Condition U3.1 (PRS 9 - Air Quality Management Plan) was due for completion 13 December 2021 and InfraBuild submitted an AQMP to the EPA in November 2021 in compliance with this condition. This plan formalises recommendations made in the Dust Mitigation Report (AECOM 2019).

5.5 Stormwater

Prior to the 7 October 2021 EPL variation, the InfraBuild Recycling Environmental Protection Licence (EPL) no. 5345 did not contain specific requirements for discharges to water and consequently, as stated in the licence, InfraBuild Recycling was required to comply with Section 120 of the Protection of the Environment Operations Act 1997 (POEO Act) for any water discharge.

On 28 May 2019, a Surface Water Characterisation Study was added to the licence as a Pollution Reduction Study (PRS 5). This included a Water Balance model, Water Characterisation, Sampling Plan, Discharge Characterisation, Discharge Impact Assessment and a Surface Water Mitigation & Monitoring Plan.

Work required under PRS 5 was undertaken during 2019 and 2020 with the final report issued December 2020 and subsequently submitted to the EPA for approval.

Following review by the EPA, sampling and analysis requirements were formalised in the 7 October 2021 EPL variation, being a combination of monthly and quarterly discharge sampling at five sampling locations. It is noted that no sampling was performed for October, November and December 2021 and these were identified both in the annual return and in this AEMR as a non-compliance.

The EPL currently contains PRP 8, which requires several recommended mitigation measures to be completed by June 2022 and these works are progressing. These mitigation measures are:

- U2.1: *The Licensee must upgrade the Non-ferrous Facility Sump system to be able to facilitate a pump rate of 220 litres/minute of water from the sump to the water holding tanks by 30 June 2022.*
- U2.2: *The Licensee must install gross pollutant traps for the capture of larger debris from surface flows prior to entering the Non-ferrous Facility Sump by no later than 30 June 2022.*
- U2.3: *The licensee must formalise the surface water flow path within the Non-ferrous Yard where the site falls towards Ironbark Creek, including bund improvement works, to ensure water is contained on site and that no surface water runoff is directly discharged into Ironbark Creek without prior treatment. These works must be completed by 30 June 2022.*

5.6 Soil / Groundwater

The Stage 2 Detailed Soil and Groundwater assessment required under EPL Condition U1 - PRS 6 (Soil and Groundwater assessment) has been completed and submitted (Kleinfelder 2020) to the EPA in July 2020. InfraBuild Recycling is expecting feedback from NSW EPA on the recommendations contained in the report.

6.0 Environmental Targets and Strategies

InfraBuild Recycling is committed to further improve its performance in minimising potential pollution impacts and public complaints. In light of this, AECOM recommends the following actions be considered during the next 12 month period as strategies for continuous improvement.

6.1 Environmental Management Plans

6.1.1 Operational and Environmental Management Plan

In 2005, an Operational Environmental Management Plan (OEMP) for the operation of the shredder plant was developed and approved by the Director-General of the Department of Infrastructure, Planning and Natural Resources (DIPNR) now Department of Industry, Planning and Environment (DPIE). This OEMP was required under Section 7 of the DC conditions and has been incorporated into the management of the site at Hexham.

The OEMP was last reviewed and updated (Version 5) in 2021 and it is recommended this plan be updated as required.

6.1.2 Air Quality Management Plan

Condition U3.1 of EPL 5345 required an Air Quality Management Plan (AQMP) to be developed to formalise recommendations made in the Dust Mitigation Report (AECOM 2019). The AQMP has been finalised and issued to the EPA on 3 December 2021 and is attached as **Appendix F**.

It is recommended this plan be updated as required.

6.1.3 Surface Water Mitigation and Monitoring Plan

Pollution Reduction Study (PRS) 5 - Surface Water Characterisation was completed in February 2021 and included a Surface Water Mitigation and Monitoring Plan (AECOM, December 2020) attached as **Appendix G**. This plan recommended discharge sampling at four surface water locations on a quarterly basis. Following the EPA's review of this document, the Site EPL was amended (October 2021) to include a defined surface water monitoring program, being a combination of monthly and quarterly sampling at a total of five monitoring locations.

It is recommended this plan be updated as required.

6.2 Stormwater

On 28 May 2019 a Surface Water Characterisation Study was added to the licence as Pollution Reduction Study (PRS) 5. The requirements of PRS 5 were completed in February 2021. The Surface Water Characterisation PRS was used to inform appropriate mitigation measures and recommend surface water monitoring requirements for the Premises.

Following this, the Site EPL was amended (7 October 2021) to define surface water discharge monitoring requirements, which are to be performed in line with the EPL requirements.

The EPL currently contains PRP 8 – Surface Water Mitigation and Monitoring which requires several mitigation measures to be undertaken with associated water quality monitoring performed. This program is due to be completed by 30 June 2022 and this work is currently progressing.

6.3 Noise and Overpressure/Vibration Monitoring

Continuation of the use of the boundary calculation methodology as performed for the 2020 quarterly monitoring program, with monitoring performed at both site boundary and EPL locations each quarter.

Continuation of noise and overpressure / vibration monitoring in accordance with EPL requirements; and operation of plant equipment in accordance with operating conditions outlined in the EPL.

6.4 Stack Emissions

Continuation of the EPL stack emission monitoring program which now requires annual sampling of the baghouse stack.

6.5 Ambient Air

Continuation of the due diligence monthly depositional dust monitoring program is recommended to ascertain the concentration of airborne particulates both onsite and offsite at the nearest receptor and ongoing implementation of the dust mitigation activities identified in the Dust Mitigation Report and formalised in the AQMP required under existing Condition U3 (PRS 9) of the EPL.

6.6 Meteorology

Continuation of site meteorological monitoring including regular inspection and maintenance of meteorological station sensors to minimise loss of data due to malfunction or obstruction.

6.7 Soil / Groundwater

The Kleinfelder Detailed Site Investigation (2020) required under EPL Condition U1 (PRS 6) recommended:

- *Continued monitoring of the surface water and groundwater to gather data that would allow further interpretation of longer term trends in CoPC concentrations (specifically identifying stabilised and/or declining historically elevated CoPCs).*
- *Maintain the current management strategies that are currently in place for the day to day operations of the site.*

InfraBuild is awaiting comment from NSW EPA on the report prior to undertaking any further groundwater investigations.

6.8 Corrective Action Plan

Following the most recent IEA (AQUAS, December 2020), InfraBuild Recycling Hexham established a Corrective Action Plan to follow up non-compliances identified. InfraBuild has provided an updated Action Plan (attached as **Appendix E**), and this document demonstrates all audit requirements have been closed as of 22 April 2021.

7.0 Conclusion

An assessment of compliance for the 2021 reporting period (19 Dec 2020 to 18 Dec 2021) found that all environmental monitoring results comply with the conditions of the Development Consent (345-7-2003-i MOD-49-3-2005-i) and EPL no. 5345 with the exception of the water monitoring non-compliance detailed in **Section 2.2**.

Following the most recent IEA (AQUAS 2020), InfraBuild Recycling Hexham established a Corrective Action Plan to address the non-compliances identified. All actions were addressed and closed in the 2021 reporting period with no current outstanding actions.

Environmental impacts are also demonstrated to be generally consistent with meeting the NSW EPA licence conditions. InfraBuild Recycling is committed to further improve its performance in minimising potential pollution impacts and public complaints.

8.0 References

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- NSW Environment Protection Authority, *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales*, 2016.
- SMEC Australia, *Environmental Impact Statement, Metal Shredding Facility at Hexham NSW*, Volumes 1, 2 and 3, 2003.
- InfraBuild Recycling Hexham, *Operational Environmental Management Plan, Hexham 2021*
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- AECOM Australia, *Surface Water Mitigation and Monitoring Plan, 2020*
- Standards Australia, *AS 2187.2:2006 Explosives - Storage and Use – Use of Explosives*.
- Standards Australia, *AS 3580.1.1:2007 Methods for Sampling and Analysis of Ambient Air - Guide to Siting Air Monitoring Equipment*.
- Standards Australia, *AS 3580.10.1:2016 Methods for Sampling and Analysis of Ambient Air - Determination of Particulate Matter – Deposited Matter – Gravimetric Method*.

Appendix A

Development Consent

**DETERMINATION OF A DEVELOPMENT APPLICATION
FOR STATE SIGNIFICANT, DESIGNATED AND INTEGRATED DEVELOPMENT
UNDER SECTION 80 OF THE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979**

I, the Minister for Infrastructure and Planning, under Section 80 of the *Environmental Planning and Assessment Act 1979* ("the Act"), determine the development application ("the Application") referred to in Schedule 1 by granting consent subject to the conditions set out in Schedule 2.

The reason for the imposition of conditions is to:

- i) minimise any adverse environmental impacts associated with the development;
- ii) provide for on-going environmental management of the development; and
- iii) provide for regular monitoring and reporting on the development.

Consolidated consent as modified by:

MOD-32-3-2004-i – approved 24 March 2004

MOD-37-3-2004-i – approved 1 April 2004

MOD-45-4-2004-i – approved 25 June 2004

MOD-111-11-2004-i – approved 16 February 2005

MOD-49-3-2005-i – approved 17 May 2005

Craig Knowles MP

**Minister for Infrastructure and Planning
Minister for Natural Resources**

Sydney, 2 February 2004

File No. S03/00986

SCHEDULE 1

Application made by:	Metalcorp Recyclers Pty Ltd ("the Applicant");
To:	The Minister for Infrastructure and Planning ("the Minister");
In respect of:	Lots 29-31 DP803794 and Lot 1 DP874409, Sparke Street, Hexham
For the following:	Construction and operation of a metal recycling facility ("the development"), as described in <i>Metal Shredding Facility at Hexham - Environmental Impact Statement</i> (three volumes) prepared by SMEC Australia Ltd and dated July 2003;
Development Application:	Integrated DA No. 345-7-2003-i, lodged with the Department of Infrastructure, Planning and Natural Resources on 25 July 2003;
State Significant Development	The proposal is classified as State significant development under section 76A(7)(d) of the <i>Environmental Planning and Assessment Act 1979</i> (the Act).

Integrated Development

The proposal requires additional approvals from the Department of Environment and Conservation under the *Protection of the Environment Operations Act 1997*, the Department of Infrastructure, Planning and Natural Resources under the *Rivers and Foreshores Improvement Act 1948*, and the Roads and Traffic Authority and Newcastle City Council under the *Roads Act 1993*. Consequently, the proposal is classified as Integrated Development under Section 91 of the *Environmental Planning and Assessment Act 1979*.

Designated Development:

The proposed development satisfies the criteria for mineral processing or metallurgical works under Part 1, Schedule 3 of the *Environmental Planning and Assessment Regulation 2000*, and is therefore classified as Designated Development.

BCA Classification:

Class 5, Class 7, Class 8, Class 10

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SCHEDULE 2

In this consent, except in so far as the context or subject-matter otherwise indicates or requires, the following terms have the meanings indicated:

Act	<i>Environmental Planning and Assessment Act, 1979</i>
AEMR	Annual Environmental Management Report
Applicant	Metalcorp Recyclers Pty Ltd
BCA	Building Code of Australia
construction	any activity requiring a Construction Certificate, any road works, or any construction related activity as described in the application for this development
Council	Newcastle City Council
Department	NSW Department of Infrastructure, Planning and Natural Resources
development	the development to which this consent applies
Director-General	Director-General of the NSW Department of Infrastructure, Planning and Natural Resources, or delegate
dust	any solid material that may become suspended in air
EPA	NSW Department of Environment and Conservation (incorporating the Environment Protection Authority)
Minister	Minister for Infrastructure and Planning, or delegate
operation	the period commenced by the commissioning of any stage of the works as described in the application for this development
Principal Certifying Authority	the Minister or an accredited certifier, appointed under section 109E of the Act, to issue a Part 4A Certificate as provided under section 109C of the Act
Regulation	<i>Environmental Planning and Assessment Regulation, 2000</i>
RIC	Rail Infrastructure Corporation
RTA	NSW Roads and Traffic Authority
POEO Act	<i>Protection of the Environment Operations Act, 1997</i>
site	the land to which this consent applies

1. GENERAL

Obligation to Minimise Harm to the Environment

- 1.1 The Applicant shall implement all practicable measures to prevent or minimise any harm to the environment that may result from the construction, operation and where relevant, the decommissioning of the development.

Scope of Development

- 1.2 The Applicant shall carry out the development generally in accordance with:
- a) Development Application No. 345-7-2003-i, lodged with the Department of Infrastructure, Planning and Natural Resources on 25 July 2003, as amended by:
 - i) MOD-32-3-2004-i, in relation to modification of the consent to require the construction of an acoustic barrier, the conditional restriction of activities and deliveries at the site and a requirement to establish a Community Consultative Committee;
 - ii) MOD-37-3-2004-i, in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to enable the staged commencement of construction works;
 - iii) MOD-45-4-2004-i in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to enable the commencement of construction works, and to provide for an alternative U-Turn facility;
 - iv) MOD-111-11-2004-i, in relation to modification of the development consent with respect to altering the timing for the completion of roadworks;
 - v) MOD-49-3-2005-i, in relation to modification of the consent with respect to removing the requirement to provide an acoustic barrier at St Josephs Catholic Care for the Aged facility;
 - b) *Metal Shredding Facility at Hexham – Environmental Impact Statement* (Volumes 1, 2 and 3), prepared by SMEC Australia Ltd and dated July 2003;
 - c) *Proposed Metal Recycling Facility, Sparke Street, Hexham – Response to DIPNR fax dated 2 October 2003*, prepared by SMEC Australia Pty Ltd and dated 23 October 2003;
 - d) *Traffic Analysis, Intersection of Pacific Highway and Sparke Street, Hexham*, prepared by Terra Consulting Australia Pty Ltd and dated 26 November 2003;
 - e) Correspondence titled *Re: Existing – V – Predicted Noise Levels* from Peter Karantonis of Renzo Tonin and Associates Pty Ltd to Jim Clarence of the EPA and dated 24 September 2003;
 - f) Revised plans accompanying the DA, numbered 0321-03-04A and 0321-03-02;
 - g) correspondence titled *Metalcorp Recyclers DA 345-7-2003-i – Shredder development of Lots 29 & 30 Sparke Street Hexham*, from Smorgon Steel Recycling to the Department, dated 16 March 2004;
 - h) correspondence titled *Metalcorp Recyclers proposed development of Lots 29 & 30 Sparke Street, Hexham, DA 345-7-2003-i Section 96 Modification application* (with addendum) from Smorgon Steel to the Department, dated 23 April 2004;
 - i) correspondence titled *Metalcorp Recyclers Pty Ltd – Applicant for modification of consent DA 345-7-2003-i: Lots 29 & 30 Sparke Street, Hexham* (with attachments) from Smorgon Steel to the Department, dated 15 March 2005;
 - j) the conditions of this consent.

1.3 In the event of an inconsistency between:

- a) the conditions of this consent and any document listed from condition 1.2a) to 1.2i) inclusive, the conditions of this consent shall prevail to the extent of the inconsistency; and
- b) any document listed from condition 1.2a) to 1.2i) inclusive, and any other document listed from condition 1.2a) to 1.2i) inclusive, the most recent document shall prevail to the extent of the inconsistency.

1.4 The Applicant shall not concurrently operate the shredder the subject of this development consent, with the existing shredder located and operating on the site (as in existence at the time of granting this consent).

Statutory Requirements

1.5 The Applicant shall ensure that all licences, permits and approvals are obtained and kept up-to-date as required throughout the life of the development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals.

Note: A Part 3A permit under the *Rivers and Foreshores Improvement Act 1948* must be obtained from the Department (Hunter Region) prior to the commencement of the proposed intersection works on the Pacific Highway and the proposed drainage channel construction works on Lot 1 DP874409.

Dispute Resolution

1.6 In the event that a dispute arises between the Applicant and Council or the Applicant and a public authority other than the Department, in relation to a specification or requirement applicable under this consent, the matter shall be referred by either party to the Director-General, or if not resolved, to the Minister, whose determination of the dispute shall be final and binding on all parties. For the purpose of this condition, "public authority" has the same meaning as provided under section 4 of the Act.

Note: Section 121 of the *Environmental Planning and Assessment Act 1979* provides mechanisms for resolution of disputes between the Department, the Director-General, Councils and public authorities.

2. COMPLIANCE

2.1 The Applicant shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.

2.2 The Applicant shall be responsible for environmental impacts resulting from the actions of all persons on the site, including contractors, subcontractors and visitors.

2.3 Prior to each of the events listed from a) to b) below, or within such period otherwise agreed by the Director-General, the Applicant shall certify in writing to the satisfaction of the Director-General that it has complied with all conditions of this consent applicable prior to that event. Where an event is to be undertaken in stages, the Applicant may, subject to the agreement of the Director-General, stage the submission of compliance certification consistent with the staging of activities relating to that event.

- a) commencement of construction of the development; and
- b) commencement of operation of the development;

- 2.4 Notwithstanding condition 2.3 of this consent, the Director-General may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Director-General and be submitted within such period as the Director-General may agree.
- 2.5 The Applicant shall meet the requirements of the Director-General in respect of the implementation of any measure necessary to ensure compliance with the conditions of this consent, and general consistency with the documents listed under condition 1.2 of this consent. The Director-General may direct that such a measure be implemented in response to the information contained within any report, plan, correspondence or other document submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.

3. CONSTRUCTION AND PART 4A CERTIFICATION

- 3.1 In relation to the construction and occupation of the development, the Applicant shall provide to the Director-General and Council the following:
- a) written notification of the appointment of a Principal Certifying Authority;
 - b) copies of all Construction Certificates issued for the development;
 - c) written notification of the intention to commence construction work, to be received at least two working days prior to the commencement of construction. In the event that more than one Construction Certificate is issued, notification shall be provided prior to the commencement of construction the subject of each Certificate;
 - d) copies of all Occupation Certificates issued for the development; and
 - e) written notification of the intention to occupy the development, to be received at least two working days prior to occupation. In the event that more than one Occupation Certificate is issued, notification shall be provided prior to the occupation the subject of each Certificate;
- 3.2 Prior to the commencement of any construction activities associated with the development, the Applicant shall erect at least one sign at the construction site and in a prominent position at the site boundary where the sign can be viewed from the nearest public place. The sign(s) shall indicate:
- (a) the name, address and telephone number of the Principal Certifying Authority;
 - (b) the name of the person in charge of the construction site and telephone number at which that person may be contacted outside working hours; and
 - (c) a statement that unauthorised entry to the construction site is prohibited.

The sign(s) shall be maintained for the duration of construction works, and shall be removed as soon as practicable after the conclusion of the construction works.

4. ENVIRONMENTAL PERFORMANCE

Noise Impacts

Construction Noise

- 4.1 The Applicant shall ensure that all construction activities associated with the development do not exceed the criteria at the nominated locations specified in Table 1.

Table 1 – Construction Noise Criteria

Locations	Day
	$L_{Aeq}(15 \text{ minute})$ (dB(A))
Shamrock Street (Hexham) residences	47
St. Joseph's Retirement Village (Hexham)	53

- 4.2 Construction activities associated with the development shall only be conducted between 7:00 am and 6:00 pm from Monday to Friday inclusive, and from 8:00 am to 1:00 pm on Saturdays. No construction activity is permitted on a Sunday or a public holiday.

Note: This condition does not apply in the event of a direction from police or other relevant authority for safety reasons, or to avoid the loss of life, property or damage to the environment.

Operation Noise

- 4.3 ¹The Applicant shall design, construct, operate and maintain the development to ensure that noise generated during the operation of the development does not exceed the noise limits specified in Table 2, at those locations and during those periods indicated. The maximum allowable noise contributions apply under:
- wind speeds up to 3 ms^{-1} (measured at 10 metres above ground level); and
 - temperature inversion conditions up to 3°C per 100 metres.

Table 2 - Operation Noise Limits

Location	Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays	Evening 6:00pm to 10:00pm on any day	Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays	
	$L_{Aeq}(15 \text{ minute})$	$L_{Aeq}(15 \text{ minute})$	$L_{Aeq}(15 \text{ minute})$	$L_{A1}(1 \text{ minute})$
Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55
St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56
Any operating industrial premises affected by noise from the premises	70	70	70	N/A

Note: 5dB(A) shall be added to the measured level should the noise be substantially tonal or impulsive in character.

- 4.4 ²For the purpose of assessment of noise impacts specified under condition 4.3 of this consent, noise from the development shall be measured within one metre of the boundary of any affected residential or industrial premises.

¹ Incorporates a EPA General Term of Approval (L6.1, L6.2 and L6.3)

² Incorporates a EPA General Term of Approval (L6.1)

Operating Hours

- 4.5 ³The Applicant shall only operate the metal shredder between 7:00am and 6:00pm Monday to Saturday, and at no time on Sunday or Public Holidays.
- 4.6 ⁴Notwithstanding condition 4.5, the Applicant may operate the metal shredder between the hours of 6:00pm and 10:00pm, Monday to Friday, where the following requirements are complied with:
- a) an unplanned and unforeseeable situation arises at the premise by which the operation of the NSW remelt steel industry is at risk of being negatively impacted by a shortage of shredded scrap;
 - b) the Director-General, EPA and noise receptors within 1.5km radius of the metal shredder are informed, in writing, at least 24 hours prior to commencing outside the permitted hours of operation; and
 - c) that an officer appointed by the Applicant will be on site at all times during the extended hours of operation, solely for the purpose of ensuring compliance with noise limits at various locations.

Note: For the purposes of the above condition, 'all noise receptors within a 1.5km radius of the metal shredder' is limited to:

- a) the noticeboards of St Joseph's Retirement Village, Hexham.
- b) the residences on Old Maitland Road, west of St. Joseph's Retirement Village
- c) the residences on Pacific Highway and intersecting streets between Ironbark Creek and No.59 Pacific Highway, Hexham.

- 4.7 ⁵The Applicant may seek approval from the EPA to extend the hours of operation for the metal shredder, as specified in condition 4.5, incrementally to 10:00pm Monday to Friday. In seeking this approval, the Applicant shall submit to the EPA the necessary information in order to determine that the activities undertaken during the varied operating hours will not have an adverse impact on the acoustic amenity of receptors within the vicinity of the site. Any request to the EPA to extend the operating hours specified in condition 4.5 shall be accompanied by:
- a) at least six months of noise monitoring data of the shredder plant operating at design capacity and conducted in accordance with the *New South Wales Industrial Noise Policy* guideline (EPA, 2000);
 - b) evidence demonstrating full compliance with all noise limits since commissioning the shredder plant;
 - c) evidence that the plant would be able to comply with the evening noise limits specified in condition 4.3 during the proposed extended hours of operation; and
 - d) demonstration that the potential for explosions can be suitably managed at the site (and the associated potential impacts mitigated) during the proposed extended hours of operation.

Any approval by the EPA in accordance with the above condition shall be forwarded to the Director-General by the Applicant immediately.

- 4.8 ⁶Any extension in the shredder plant operating hours granted by the EPA under condition 4.7 shall be on the condition that the Applicant is able to demonstrate on-going compliance with the noise limits specified in condition 4.3. Should the noise limits specified in condition 4.3 be regularly exceeded and/or if explosions become

³ Incorporates a EPA General Term of Approval (L7.1)

⁴ Incorporates a EPA General Term of Approval (L7.1)

⁵ Incorporates a EPA General Term of Approval (L7.1)

⁶ Incorporates a EPA General Term of Approval (L7.1)

unmanageable at the site, and if the impacts have not been mitigated by the Applicant to the satisfaction of the EPA, the EPA may withdraw its approval under condition 4.7 at any time.

Operation Hours – Ancillary Activities

- 4.8A Further to conditions 4.5 to 4.8 of this consent, the Applicant shall only undertake activities ancillary to the operation of the metal shredder, including the operation of all associated plant, equipment and machinery, loading/unloading of materials, materials handling and ingress/egress of heavy vehicles to/from the site, between 7:00am and 10:00pm Monday to Saturday, and at no time on Sunday or Public Holidays
- 4.8B Notwithstanding condition 4.8A of this consent, the Applicant may seek the Director-General's approval to alter the hours of operation for ancillary activities specified under condition 4.8A. In seeking the Director-General's approval, the Applicant shall provide the following information:
- (a) an appropriate level of noise assessment for activities to be undertaken within extended operation hours, prepared in accordance with the relevant guidance in the *Industrial Noise Policy* (EPA, 2000) and *Environmental Criteria for Road Traffic Noise* (EPA, 1999). The assessment shall also demonstrate compliance and consistency of the proposed extended activities with relevant noise limits and noise management criteria specified under this consent and the Environment Protection Licence for the site;
 - (b) details of consultation(s) with the EPA in relation to the proposed extended operation hours, with a demonstration that EPA requirements have been addressed; and
 - (c) details of community consultation(s) undertaken in relation to the proposed extended operation hours, with a demonstration that issues identified through community consultation have been addressed. Community consultation shall include, but not necessarily be limited to representative(s) of the St Josephs Catholic Care of the Aged facility, and the Shortland and Birmingham Residents' Action Group.

Acoustic Barrier

4.8C Deleted*

4.8D Deleted.†

- 4.8E The Applicant shall install noise monitoring equipment at the St Josephs Catholic Care of the Aged facility, in consultation with the owners of that property, and to the satisfaction of the Director-General. The Applicant shall operate the noise monitoring equipment on an on-going basis, as may be agreed with the St Josephs Catholic Care of the Aged facility, to monitor noise impacts from the development on that property. All monitoring data shall be made available to the St Josephs Catholic Care of the Aged facility. The Applicant may only cease noise monitoring in accordance with this condition, after having consulted with the St Josephs Catholic Care of the Aged facility, and only with the agreement of the Director-General.

Plant Retrofit

- 4.9 ⁷ As may be directed by the EPA to address noise emissions from the development, the Applicant shall undertake the following works:
- a) installation of additional noise controls to the shredder and associated plant;
 - b) installation of noise controls to the scrap loading and unloading facilities;
 - c) implementation of noise controls to ensure compliance with noise limits at adjoining industrial properties when operations on those properties commence; and
 - d) installation of appropriate controls on the shredder stack out conveyor and associated area to reduce noise emissions.

Traffic and Transport

Sparke Street Intersection

- 4.10 ⁸The Applicant shall construct, and pay the full cost of, traffic control signals at the Sparke Street/Pacific Highway intersection. These traffic signals shall be installed as a two-phase system to control northbound Pacific Highway, right turn in and left turn out movements only. The signals shall be coordinated with Shamrock Street signals and shall prohibit all right-hand turn movements out of Sparke Street. In association with these signals, the Applicant shall also undertake the following works:
- a) relocation of the Sparke Street/Pacific Highway intersection approximately 70-80 metres north of the current intersection and at right angles to the Pacific Highway;
 - b) construction of an indented right turn lane into Sparke Street within the central median that accommodates two B-Double vehicles and a deceleration lane;
 - c) provision of a left turn deceleration lane into Sparke Street;
 - d) provision of a left turn out of Sparke Street under signalisation;
 - e) construction of appropriate physical barriers to prevent right-hand turn movements out of Sparke Street, with suitable signage reinforcing this ban;
 - f) provision of flashing warning lights in advance of the northbound approach to Sparke Street to advise motorists of the traffic control signals;
 - g) construction of a roadway (new Sparke Street alignment) from the Pacific Highway to the existing Sparke Street;
 - h) closure of the median at the existing Sparke Street intersection, including the removal and making good of the obsolete part of Sparke Street;
 - i) ⁹removal of vegetation to maintain appropriate sight distances as required by RTA standards.

These roadworks shall be at the full cost of the Applicant and shall be completed to RTA's and Council's satisfaction within three months of the commencement of operations at the site, unless otherwise agreed by the RTA and Council.

⁷ Incorporates a EPA General Term of Approval (E1.8)

⁸ Incorporates a RTA General Term of Approval (1)

⁹ Incorporates a Newcastle City Council General Term of Approval (1)

- 4.11 ¹⁰The Applicant shall design the work specified in condition 4.10 in accordance with the RTA's *Road Design Guide*, AUSTROAD guidelines and relevant Australian Standards, as directed by the RTA. This shall include:
- a) construction of auxiliary lanes for the 80 kph speed limit or the 85th percentile speed, whichever is the greater;
 - b) provision for B-Doubles vehicle movements and storage;
 - c) provision for on-road cyclists through the realigned Sparke Street intersection; and
 - d) street lighting, sign posting and line marking along the realigned Sparke Street intersection and roadway.

- 4.12 ¹¹Prior to the commencement of any construction work associated with the development, the Applicant shall obtain the RTA's and Council's approval of the concept design of the road work specified in condition 4.10 and condition 4.11, and shall enter into a Works Authorisation Deed, detailing the timeframe for obtaining a final approval of these works, with the RTA under the section 138 of the *Roads Act 1993*.

The Applicant shall forward the Director-General written evidence demonstrating that an approval of the concept design has been issued by the RTA and Council, and that a Works Authorisation Deed for the development has been accepted by the RTA prior to the commencement of construction work.[‡]

- 4.13 ¹²Should the Applicant commence construction activities at the site prior to the completion of the work specified under condition 4.10, the Applicant shall implement measures to the satisfaction of Council and RTA to control traffic movements to and from the site to ensure that the efficiency and safety of the surrounding road network is not affected. The Applicant shall install these measures prior to the commencement of construction works at the development site and shall maintain the measures until the realigned intersection is fully operational.

- 4.13A Should the Applicant intend to commence operation of the development prior to the completion of the road works required under condition 4.10, 4.18 and 4.19 of this consent, the Applicant shall prepare and submit for the approval of the RTA and Council a Traffic Management Protocol. The Protocol shall be submitted to the RTA and Council no later than one month prior to the intended commencement of operation, unless otherwise agreed to by the RTA and Council. The Protocol shall detail measures to manage traffic and potential conflict between roadworks, heavy vehicles associated with the development and existing traffic. The Protocol shall include, but not necessarily be limited to:
- a) procedures, systems and protocols for the management of operational traffic from the development; its interaction with intersection (and any other roadworks) construction; and its interaction with Pacific Highway traffic during all stages of intersection (and any other roadworks) construction;
 - b) details of how Pacific Highway traffic priority will be maintained; and
 - c) details of how operational traffic will be eliminated during peak traffic periods.

The Applicant shall not commence operation of the development until it has received written approval of the Protocol from both the RTA and Council, and shall implement the Protocol to the satisfaction of the RTA and Council until the roadworks required under this consent are completed.

¹⁰ Incorporates a RTA General Term of Approval (1 & 3) and Newcastle City Council General Term of Approval (1)

¹¹ Incorporates a RTA General Term of Approval (6)

¹² Incorporates a RTA General Term of Approval (4)

- 4.14 ¹³Land occupied by the realigned and widened intersection shall be dedicated as a road reserve at no cost to Council or the RTA prior to the commencement of operations at the site.

Southbound U-Turn Facility

- 4.15 ¹⁴All southbound vehicles associated with the development departing the site shall not be permitted to undertake right-hand turn movements onto the Pacific Highway. These vehicles shall only utilise the U-turn facility located on the Applicant's property at the corner of New England Highway and Pacific Highway, Hexham (378 Maitland Road, Hexham). No other U-turn facility shall be used for this purpose, unless otherwise approved by the RTA and Council in accordance with condition 4.15(A).

At no time shall southbound vehicles associated with the development use any street in a residential area for the purpose of conducting a U-turn. This includes Shamrock Street, Hexham.

- 4.15A Should the U-turn facility specified in condition 4.15 become no longer available for the purposes of the condition, the Applicant shall construct an alternative U-turn facility under the Hexham Bridge with access to/from the highway to be provided via the Oak traffic control signals at a location and standard to be determined by the RTA and Council. This U-turn facility shall be constructed at the full cost to the Applicant and to the satisfaction of the RTA and Council.

The alternative facility shall be fully operational prior to any restriction of access to the U-turn facility specified in condition 4.15 (or as otherwise required by the RTA and Council).

- 4.16 ¹⁵B-Doubles shall not utilise the U-turn facility located on Applicant's property at the corner of New England Highway and Pacific Highway, Hexham, without the prior approval of the RTA and Council.

Northbound Vehicle Movements

- 4.17 Heavy vehicle movements associated with the development travelling to and from the site to the Sydney Greater Metropolitan area shall only access the F3 via the New England Highway.

Sparke Street

- 4.18 ¹⁶Prior to the commencement of any construction work associated with the development, excluding works associated with piling activities at Lots 29-30 DP 803794, the Applicant shall submit for the approval of Council a pavement design report investigating the suitability of the existing road pavement of Sparke Street from the realigned Sparke Street to the north-eastern boundary of Lot 30 DP803794. This report shall:
- (a) be prepared and certified by a suitably qualified geotechnical engineer;
 - (b) be based on the anticipated vehicular traffic volumes and loadings associated with the development; and
 - (c) identify any pavement areas damaged as a result of the Applicant's operations that require rehabilitation to accommodate the increase traffic movements generated by the development.

¹³ Incorporates a RTA General Term of Approval (1) and Newcastle City Council General Term of Approval (1)

¹⁴ Incorporates a RTA General Term of Approval (2 & 4) and Newcastle City Council General Term of Approval (3)

¹⁵ Incorporates a RTA General Term of Approval (2)

¹⁶ Incorporates a Newcastle City Council General Term of Approval (5)

Should any rehabilitation be required, these works shall be at the full cost of the Applicant and shall be completed to the satisfaction of Council within three months of the commencement of operations at the site, or as otherwise agreed to by Council.^{§**}

- 4.19 ¹⁷Within three months of the commencement of operations at the site, the Applicant shall reconstruct, to Council's satisfaction and at the full cost of the Applicant, the full width of Sparke Street from the north-eastern boundary of Lot 30 DP803794 to the south-western boundary of Lot 29 DP803794. The design of these works shall meet Council's requirements and shall include:
- (a) road pavement;
 - (b) road shoulder pavement;
 - (c) footway formation;
 - (d) associated drainage works; and
 - (e) reconstruction of the three existing vehicular driveway crossings to the existing operations located at Lot 1 DP874409.

Construction works associated with the development shall not commence until the Applicant has obtained Council's approval of the concept design plans for the above work. A copy of this approval shall be submitted to the Director-General prior to the commencement of any construction work.

Prior to the commencement of the road works specified in the condition, the Applicant shall obtain Council's approval of the final design plans for these works.^{†††}

Site Access, Internal Roads and Parking

- 4.20 The Applicant shall ensure that all heavy vehicles enter and leave the site in a forward direction.
- 4.21 Vehicles associated with the construction or operation of the development shall be accommodated on site at all times.
- 4.22 Landscaping and any other obstructions to visibility shall not affect driver sight distance for vehicles entering and exiting the site.
- 4.23 Prior to the commencement of any transport to the site involving B-double vehicles, the Applicant shall demonstrate to the satisfaction of the Director-General that the B-double reclassification of Sparke Street has been approved by the RTA in association with Council.
- 4.24 The Applicant shall design and construct all internal road works, including the associated parking facilities, line marking (or similar) and loading bays, in accordance with the relevant RTA and Council standards and codes, including AS 2890.1-1993 and AS 2890.2-2002.
- 4.25 Internal roads, driveways, parking areas, loading bays and vehicular turning areas shall be maintained clear of obstruction and used exclusively for the purposes of parking, vehicle access and loading and unloading respectively. Under no circumstances shall these areas be used for the storage of goods or waste materials or any other purpose.

¹⁷ Incorporates a Newcastle City Council General Term of Approval (16)

- 4.26 The Applicant shall ensure that there is sufficient carparking facilities provided on site to cater for the maximum number of employees, customers/visitors, service vehicles and heavy vehicles associated with the operation of the development at any one time.
- 4.27 The Applicant shall clearly mark all visitor, disabled, and service vehicle parking areas.
- 4.28 The Applicant shall install signage to demarcate all vehicle movements within and between Lots 29-30 DP803794 and Lot 1 DP874409.

Air Quality Impacts

Dust Emissions

- 4.29 The Applicant shall design, construct, commission, operate and maintain the development in a manner that minimises dust emissions from the site. All activities undertaken on the site shall be carried out in a manner that minimises the generation of dust, and emission of dust from the site, including wind-blown and traffic-generated dust.

Plant Retrofit

- 4.30 ¹⁸As may be directed by the EPA to address dust emissions from the development, the Applicant shall undertake the following works:
- a) installation of appropriate litter controls on the shredder stack out conveyor and associated area to minimise the possibility of dust emissions;
 - b) installation of dust controls on plant conveyors and floc storage; and
 - c) implementation of dust and water quality controls at the site and any part of Sparke Street that is under the control of the Applicant.

Shredder

- 4.31 The Applicant shall design, construct, commission and operate the development to ensure that the concentrations of Total Solid Particles, lead (Pb), and mercury (Hg) discharges from the shredder plant do not exceed the limits specified in Table 3.

Table 3 – Maximum Allowable Discharge Concentration Limits (Air)

Pollutant	Maximum Allowable Discharge Concentration Limit	Reference Conditions
Lead (Pb)	5.0mg/m ³	dry, 273K, 101.3kPa
Mercury (Hg)	1.0mg/m ³	dry, 273K, 101.3kPa
Total Solid Particles	100/m ³	dry, 273K, 101.3kPa

- 4.32 ¹⁹The Applicant shall ensure that all process related fabric filters installed on the site are fitted with a bag leak detection and alarm system to the satisfaction of the EPA.

Soil and Water Quality Impacts

- 4.33 The Applicant shall take all reasonable measures to minimise soil erosion and the discharge of sediments and pollutants from the site during construction and operation.

¹⁸ Incorporates a EPA General Term of Approval (E1.8)

¹⁹ Incorporates a EPA General Term of Approval (E1.7)

Stormwater

- 4.34 ²⁰The stormwater management infrastructure shall be designed, where practicable, to ensure that the time of concentration is limited to 10 minutes in the design storm event. Interception pits shall be installed where required to ensure that contaminated stormwater does not reach the first flush pit once it has reached its maximum capacity.
- 4.35 During the construction and operation of the development, the Applicant shall prevent the discharge of stormwater originating from the site onto the neighbouring railway corridor (unless otherwise approved by State Rail).

Acid Sulfate Soils

- 4.36 Prior to the commencement of construction of the development, the Applicant shall undertake acid sulfate soil testing for areas of the site to be disturbed during site construction. Acid sulfate soil testing shall be consistent with the EPA's Environmental Guideline *Assessing and Managing Acid Sulfate Soil* and the Acid Sulfate Soil Management Advisory Committee (ASSMAC) document *Acid Sulfate Soil Manual*. Should testing indicate that any potential or actual acid sulfate soils may be disturbed during site preparation works or the construction of the facility, the Applicant shall prepare an Acid Sulfate Soil Management Plan (refer to condition 7.3).

Waste Management

- 4.37 The Applicant shall not receive waste at the site for storage, treatment, processing or reprocessing, and shall not dispose of waste generated by the development on the site, except as may be expressly permitted by an Environment Protection Licence for the development under the *Protection of the Environment Operations Act 1997*.
- 4.38 ²¹The Applicant shall ensure that uncompacted motor vehicles are only received, stored, drained of fluids and decontaminated in a dedicated area that is separately bunded to contain and store liquids drained from vehicles before they are forwarded to the main scrap receival area.

Visual Amenity

- 4.39 The Applicant shall ensure that all new external lighting associated with the development is mounted, screened, and directed in such a manner so as not to create a nuisance to surrounding land uses. The lighting shall be the minimum level of illumination necessary, and be in general accordance with AS 4282 – 1997 *Control of the Obtrusive Effects of Outdoor Lighting*.
- 4.40 The Applicant shall not utilise Lot 31 DP 803794 for the purposes of temporary or permanent storage of waste material or any item of equipment.
- 4.41 All containers used for the transportation of scrap metal shall be contained on-site at all times.
- 4.42 Nothing in this consent allows the Applicant to erect or display any advertising structure(s) or advertisements associated with the development.

<p>Note: The Applicant must seek development consent from Council for the erection of advertising structures.</p>

²⁰ Incorporates a EPA General Term of Approval (E1.2)

²¹ Incorporates EPA General Term of Approval (E1.5)

Landscaping

- 4.43 Prior to the commencement of operations at the site, where practicable, dense screen planting shall be undertaken by the Applicant at all locations where the works associated with the development will be visible, using native tree and shrub species endemic to the area, suited to local soil conditions and consistent with those in the surrounding landscape.
- 4.44 The Applicant shall landscape the site in accordance with condition 4.43 and the Landscape Management Plan referred to under condition 7.4e) for the development, and maintain this landscaping for the full life of the development. Landscaping works shall not commence until the Director-General has approved the Landscape Management Plan.
- 4.45 Within 90 days of completing the landscape works outlined in the Landscape Management Plan (refer to condition 7.5d)), the Applicant shall submit a Landscape Completion Report to the Director-General, which demonstrates that the landscaping works have been completed in accordance with the approved Plan.

Dangerous Goods

- 4.46 All chemicals, fuels and oils shall be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. Bunds shall be designed and installed in accordance the requirements of the EPA's *Environmental Protection Manual Technical Bulletin Bunding and Spill Management*.

Flood Work

- 4.47 Prior to the commencement of any construction work at the site, the Applicant shall obtain necessary approvals from the Department (Hunter Region) under section 256 of the *Water Management Act 2000*.
- 4.48 The development shall be carried out strictly in accordance with the recommendations of the Flood Report, titled *Rationalisation of Floodways connecting Hexham Swamp to the Hunter River (Issue 2)* prepared by Patterson Britton and dated July 2003.

Railway Corridor

- 4.49 Prior to the commencement of any construction work at the site within 50 metres of the neighbouring railway corridor at the site, the Applicant shall submit to RIC a Risk Assessment/Management Plan and detailed Work Method Statement to ensure construction activities do not impact on the integrity of the railway corridor.

The Applicant shall obtain the approval from RIC prior to the commencement of any construction activities within the above 50 metres buffer area and shall implement any conditions imposed by RIC as part of these approvals.

- 4.50 Any use of a crane, plant or machinery on site shall comply with the RIC's *Electrical Safety Manual* and all relevant RIC standards and guidelines. The Applicant shall not operate any crane, plant or machinery within three metres (horizontally) of any electrified infrastructure, or within a distance that has the potential to reach over the rail corridor at any time.
- 4.51 The Applicant shall ensure that no metal ladders, scaffolding, plant/machinery or conductive material is used on site within 6 horizontal metres of any live electrical equipment associated with the rail corridor infrastructure.

- 4.52 The Applicant shall not undertake any work within the rail corridor or its easements at any time unless prior approval has been granted by State Rail or an Access Deed has been entered into between the Applicant and State Rail. Should work be required in these areas, the Applicant shall bear the full cost associated with obtaining the approval or Access Deed and any required supervision, design checks, meetings and/or service searches.

Should the Applicant require access to the rail corridor prior to gaining the above approval or Access Deed, the Applicant shall be required to enter into a Release and Indemnity agreement prior to accessing the rail corridor or associated easements.

- 4.53 Prior to the commencement of operations at the site, the Applicant shall install appropriate fencing along the common boundary of the site and the adjoining railway corridor at Lot 29 DP803794 and lot 1 DP 874409 to the satisfaction of State Rail and at the full cost of the Applicant. The design of the fencing shall be approved by State Rail prior to the installation of the fencing.

5. ENVIRONMENTAL MONITORING AND AUDITING

Noise Monitoring and Auditing

- 5.1 ²²Within 90 days of commencement of operation of the development, and during a period in which the development is operating under design loads and normal operating conditions, the Applicant shall conduct a **Noise Audit** of its operations. This Audit shall:
- (a) be undertaken by a suitably qualified and experienced person;
 - (b) assess whether the development is complying with the intrusive and amenity noise criteria, and the predicted noise levels detailed in documents specified in condition 1.2b) and condition 1.2e) of this consent;
 - (c) identify what additional measures could be implemented to ensure compliance should any non-compliance be detected; and
 - (d) provide details of any complaints received relating to noise generated by the development, and action taken to respond to those complaints.
- 5.2 ²³Within 28 days of conducting the Audit referred to under condition 5.1 of this consent, the Applicant shall provide the Director-General and EPA (Hunter) with a copy of the Noise Audit report. If the Audit identifies any non-compliance with the noise limits imposed under this consent, the Applicant shall detail what additional measures would be implemented to ensure compliance, clearly indicating who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director-General and the EPA.

²² Incorporates a EPA General Term of Approval (E1.9.1)

²³ Incorporates a EPA General Term of Approval (E1.9.2)

- 5.3 The Applicant shall prepare and implement a **Noise Monitoring Program** to monitor noise impacts associated with the development. The Program shall be consistent with guidelines provided in *New South Wales Industrial Noise Policy* (EPA, 2000) and shall include, but not necessarily be limited to:
- identification of noise monitoring locations, with relevant noise limits for each location provided;
 - noise monitoring frequencies; and
 - methodologies for noise monitoring.

The Noise Monitoring Program shall be submitted for the approval of the Director-General prior to the commencement of operation of the development, or within such period as the Director-General may agree.

Overpressure and Vibration Monitoring

- 5.4 ²⁴The Applicant shall install, maintain and operate suitable instrumentation, in accordance with Australian Standard 2187.2-1993, to monitor overpressure and vibration caused by explosions on the site to the satisfaction of the EPA.

Air Quality Monitoring

Shredder Stack Emissions

- 5.5 ²⁵All air emission stacks shall be fitted with sampling points which comply with the *Clean Air (Plant and Equipment) Regulation 1997* and Australian Standard 4323.1-1995.
- 5.6 The Applicant shall periodically determine the pollutant concentrations specified in Table 4, as discharged from the shredder plant employing the sampling and analysis method specified and at the frequency indicated in the table. All monitoring shall be carried out strictly in accordance with *Approved Methods for the Sampling and Analysis of Air Pollutants in NSW* (EPA 2001).

Table 4 – Periodic Pollutant Monitoring (Air)

Pollutant	Method	Frequency
Lead	TM-12, TM-13 & TM-14	Post commissioning, annually
Mercury	TM-12, TM-13 & TM-14	Post commissioning, annually
Total solid particles	TM-15	Post commissioning, annually

- 5.7 The Applicant may seek the approval of the Director-General to alter the frequency of the pollutant/parameter monitoring required under condition 5.6 of this consent. Any request for approval shall only be provided if:
- pollutant/parameter monitoring has been undertaken for a period of no less than 12 months (measures from the commencement of operation of the development);
 - there has been no exceedence of any limit placed on the subject pollutant or parameter through this consent within the preceding 12-month period; and/or
 - if there is a relevant Environment Protection Licence for the development that requires air pollutant monitoring which is inconsistent with the requirements under condition 5.6.

²⁴ Incorporates a EPA General Term of Approval (M8.1)

²⁵ Incorporates a EPA General Term of Approval (E1.6)

Performance Monitoring

- 5.8 Within 90 days of commencement of operation of the development, and during a period in which the facility is operating under design loads and normal operating conditions, the Applicant shall undertake an air quality audit for the development and undertake dispersion modelling for all air pollutants identified in condition 4.31 to confirm the air emission performance of the facility.
- 5.9 Within 28 days of conducting the Audit, referred to under condition 5.8 of the consent, the Applicant shall provide the Director-General with a copy of the Air Quality Audit report. If the Audit identifies any non-compliance with the air quality limits or performance measures specified in the EIS, condition 4.31 of this consent, and the EPA's Impact Assessment Criteria described in *Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW*, then the Applicant shall undertake a Air Quality Mitigation Study to provide details of remedial measures that the Applicant will implement to reduce air quality impacts to the levels required, clearly indicating who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director-General.

Meteorological Monitoring

- 5.10 ²⁶The Applicant shall monitor the parameters specified in Table 5, using the specified units of measure, averaging period, frequency, and sampling method in the table.

Table 5 – Meteorological monitoring

Parameter	Units of Measure	Averaging Period	Frequency	Method
Rainfall	mm	1 Day	Daily	AM-4
Wind Speed @ 10m	m/s	15 minute	Continuous	AM-2 and AM-4
Wind Direction @ 10m	°	15 minute	Continuous	AM-2 and AM-4
Temperature @ 10m	°C	15 minute	Continuous	AM-4
Temperature @ 2m	°C	15 minute	Continuous	AM-4
Sigma Theta @ 10m	°	15 minute	Continuous	AM-4
Additional Requirements - Siting - Measurement				AM-1 & Am-4 AM-2 and AM-4

Water Quality Monitoring

- 5.11 Prior to the commencement of operations at the site, the Applicant shall submit for the approval of the Director-General, a Stormwater Quality Monitoring Program. This program shall form part of the Stormwater Operational Environmental Management Plan required by condition 7.5d). The Program shall include but not necessarily be limited to:
- (a) identification of contaminants to be tested;
 - (b) monitoring frequencies; and
 - (c) methodologies for stormwater quality monitoring.

The Stormwater Quality Monitoring Program shall be submitted for the approval of the Director-General prior to the commencement of operation of the development.

²⁶ Incorporates a EPA General Term of Approval (M7.1)

Independent Environmental Auditing

5.12 Within two years of the commencement of construction of the development, and then as may be directed by the Director-General, the Applicant shall commission an independent person or team to undertake an Environmental Audit of the development. The independent person or team shall be approved by the Director-General prior to the commencement of the Audit. The Audit shall:

- a) be carried out in accordance with *ISO 19011:2002 - Guidelines for Quality and/or Environmental Management Systems Auditing*;
- b) assess compliance with the requirements of this consent, and other licences and approvals that apply to the development;
- c) assess the environmental performance of the development against the predictions made and conclusions drawn in the documents referred to under condition 1.2 of this consent; and
- d) review the effectiveness of the environmental management of the development, including any environmental impact mitigation works.

An **Environmental Audit Report** shall be submitted to the Director-General within two months of the completion of the Audit, detailing the findings and recommendations of the Audit and including a detailed response from the Applicant to any of the recommendations contained in the Report.

6. COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

6.1 Subject to confidentiality, the Applicant shall make all documents required under this consent available for public inspection on request.

Complaints Procedure

6.2 Prior to the commencement of operations at the development site, the Applicant shall ensure that the following are available for community complaints:

- a) a 24-hour, toll-free telephone number on which complaints about the development may be registered;
- b) a postal address to which written complaints may be sent; and
- c) an email address to which electronic complaints may be transmitted.

The telephone number, the postal address and the email address shall be advertised on at least one occasion prior to the commencement of construction of each stage of the development, through a medium approved by the Director-General. These details shall also be provided on the Applicant's internet site, should one exist. The telephone number, the postal address and the email address shall be maintained throughout the life of the development.

6.3 The Applicant shall record details of all complaints received through the means listed under condition 6.2 of this consent in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:

- a) the date and time, where relevant, of the complaint;
- b) the means by which the complaint was made (telephone, mail or email);
- c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
- d) the nature of the complaint;
- e) any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and
- f) if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the Director-General upon request.

Community Consultative Committee

- 6.4 Prior to the commencement of construction of the development, the Applicant shall establish a Community Consultative Committee for the development to provide a forum for the discussion of the environmental performance of the development, provision of relevant data, and the receipt of community complaints and concerns. The Committee shall include, but not necessarily limited to representatives from the St Josephs Catholic Care of the Aged facility and the Shortland and Birmingham Residents' Action Group. The Applicant shall ensure that the Committee meets on at least one occasion prior to the commencement of construction of the development to establish arrangements for the location, timing and operation of the Committee. The Committee shall meet at least monthly during the first six months of operation of the development, after which meeting frequency shall be by agreement between the Applicant and the Committee, and for the approval of the Director-General.

7. ENVIRONMENTAL MANAGEMENT

Environmental Representative

- 7.1 Prior to the commencement of construction of the development, the Applicant shall nominate a suitably qualified and experienced Environmental Representative(s). The Applicant shall employ the Environmental Representative(s) on a full-time basis during the construction, commissioning and operation of the development. The Environmental Representative shall be:
- a) the primary contact point in relation to the environmental performance of the development;
 - b) responsible for all Management Plans and Monitoring Programs required under this consent;
 - c) responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development;
 - d) responsible for receiving and responding to complaints in accordance with condition 6.2 and condition 6.3 of this consent; and
 - e) given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

The Applicant shall notify the Director-General of the name and contact details of the Environmental Representative upon appointment, and any changes to that appointment that may occur from time to time.

Construction Environmental Management Plan

- 7.2 The Applicant shall prepare and implement a **Construction Environmental Management Plan** to outline environmental management practices and procedures to be followed during the construction of any stage of the development. The Plan shall include, but not necessarily be limited to:
- a) a description of all activities to be undertaken on the site during construction of the development, including an indication of stages of construction, where relevant;
 - b) statutory and other obligations that the Applicant is required to fulfil during construction, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
 - c) specific consideration of measures to address any requirements of Council during construction;

- d) details of how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
- e) a description of the roles and responsibilities for all relevant employees involved in the construction of the development;
- f) the Management Plans listed under condition 7.3 of this consent;
- g) arrangements for community consultation and complaints handling procedures during construction.

The Plan shall be submitted for the approval of the Director-General prior to the commencement of construction, or within such period otherwise agreed by the Director-General. Construction shall not commence until written approval has been received from the Director-General. Upon receipt of the Director-General's approval, the Applicant shall supply a copy of the Plan to Council, as soon as practicable.

7.3 As part of the Construction Environmental Management Plan for the development, required under condition 7.2 of this consent, the Applicant shall prepare and implement the following Management Plans:

- a) an **Acid Sulfate Soil Management Plan** to detail measures to be implemented in relation to the management and handling of any potential or actual acid sulfate soils identified in accordance with condition 4.36 of this consent. The Plan shall be prepared in accordance with guidance provided in *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee, 1998) and to meet the requirements of Director-General and Council. The Acid Sulfate Soil Management Plan need only be prepared should potential or actual acid sulfate soils be identified on the site.
- b) ²⁷an **Erosion and Sedimentation Management Plan** to detail measures to minimise erosion during construction of the development. The Plan shall include, but not necessarily be limited to:
 - i) results of investigations into soils associated with the site, in particular the stability of the soil and its susceptibility to erosion;
 - ii) details of erosion, sediment and pollution control measures and practices to be implemented during construction of the development;
 - iii) demonstration that erosion and sediment control measures will conform with, or exceed, the relevant requirements and guidelines provided in the Department's publication *Urban Erosion and Sedimentation Handbook*, the EPA's publication *Pollution Control Manual for Urban Stormwater* and the Department of Housing's publication *Soil and Water Management for Urban Development*;
 - iv) design specifications for diversionary works, banks and sediment basins;
 - v) an erosion monitoring program during construction of the development; and
 - vi) measures to address erosion, should it occur, and to rehabilitate/stabilise disturbed areas of the site.
- c) a **Noise Management Plan** to outline measures to minimise and mitigate noise impacts on surrounding land uses as a result of the construction of the development in association with the continued operations at the adjacent site. The Plan shall include, but not necessarily be limited to:
 - i) identification of the potential sources of noise during the proposed works;
 - ii) specification of the noise criteria for the proposed works;

²⁷ This plan shall be provided when obtaining a Part 3 permit under the *Rivers and Foreshores Improvement Act 1948*.

- iii) a detailed description of what actions and measures would be implemented to ensure that these works would comply with the relevant noise criteria.;
- iv) a description of how the effectiveness of these actions and measures would be monitored during the proposed works, clearly indicating who would conduct the monitoring, how often this monitoring would be conducted, how the results of this monitoring would be recorded; and, if any non-compliance is detected; and
- v) a description of what procedures would be followed to ensure compliance;
- d) ²⁸a **Transport Management Plan** to detail measures to ensure road works and construction activities are undertaken in a manner that does not adversely impact on the performance and safety of the surrounding road network. The Plan shall meet Council and RTA requirements, and shall include, but not necessarily be limited to:
 - (i) details of construction and operation traffic volumes and peak delivery times;
 - (ii) measures to be implemented to adequately mitigate the impact on the performance and safety of the surrounding network during the relocation of the Sparke Street and Pacific Highway intersection;
 - (iii) ²⁹measures to be implemented in accordance with condition 4.13, which shall include the installation of temporary physical barriers to prohibit right-hand turn movements out of Sparke Street; and
 - (iv) provide for the monitoring of the performance of the implemented measures; and
 - (v) details of any additional measures that would be implemented should any non-compliance be detected.

Operation Environmental Management Plan

7.4 The Applicant shall prepare and implement an **Operation Environmental Management Plan** to detail an environmental management framework, practices and procedures to be followed during the operation of the development. The Plan shall include, but not necessarily be limited to:

- i) identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the development, including all consents, licences, approvals and consultations;
- ii) a description of the roles and responsibilities for all relevant employees involved in the operation of the development;
- iii) overall environmental policies and principles to be applied to the operation of the development;
- iv) standards and performance measures to be applied to the development, and a means by which environmental performance can be periodically reviewed and improved, where appropriate;
- v) management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent;
- vi) the Management Plans listed under condition 7.5 of this consent; and
- vii) arrangements for community consultation and complaints handling procedures during construction.

The Plan shall be submitted for the approval of the Director-General no later than one month prior to the commencement of operation of the development, or within such period otherwise agreed by the Director-General. Any stage of the operations

²⁸ Incorporates a RTA General Term of Approval (5)

²⁹ Incorporates a RTA General Term of Approval (4)

shall not be commissioned until the Director-General has approved the OEMP covering the works undertaken in that stage. Upon receipt of the Director-General's approval, the Applicant shall supply a copy of the Plan to Council as soon as practicable.

7.5 As part of the Operation Environmental Management Plan for the development, required under condition 7.4 of this consent, the Applicant shall prepare and implement the following Management Plans:

- a) a **Noise Management Plan** to outline measures to manage noise impacts associated with the operation of the development. The Plan shall include, but not necessarily be limited to:
 - i) identification of the potential sources of noise during the site operations;
 - ii) specification of the noise criteria for these operations;
 - iii) a detailed description of what actions and measures would be implemented to ensure that operations would comply with specified noise criteria. This shall include measures to minimise night-time emissions and stringent screening procedures to minimise the potential for overpressure events at the site; and
 - iv) a description of how the effectiveness of actions and measures would be monitored over time; and if any non-compliance is detected what procedures would be followed to ensure compliance;
- b) a **Transport Management Plan** to outline measures to ensure minimal amenity impacts on the locality through the appropriate management of heavy vehicles accessing and departing the development. The Plan shall be prepared in consultation with Council and shall include, but not necessarily be limited to:
 - i) details of the Transport Code of Conduct for the development that outlines the management of traffic impacts associated with heavy vehicles accessing and departing the site;
 - ii) consideration of all possibilities for reducing the required daily heavy vehicle movements and movements during peak or night-time periods;
 - iii) procedures to ensure the safe and efficient movement of vehicles between Lots 29-30 DP803794 and Lot 1 DP874409;
 - iv) procedures to limit the tracking of mud/dirt on the road way between Lots 29-30 DP803794 and Lot 1 DP874409;
 - v) procedures for monitoring the effectiveness and suitability of these measures; and
 - vi) details of additional measures that would be implemented should be non-compliance be detected.
- c) a **Flood Emergency Management Plan** to outline measures that would be implemented in a time of flood. The Plan shall provide detailed evacuation procedures to interface with the Bureau of Meteorology's flood warning system and the local State Emergency Services plan (where appropriate) and to include provisions for any third parties likely to be involved. The Plan shall also include, but not necessarily be limited to:
 - i) a detailed description of the likely flood behaviour of the area within the vicinity of the site;
 - ii) identification of the flood warning systems that would be utilised by the proposed operations;
 - iii) details of the workforce education awareness program implemented at the site;
 - iv) details of the evacuation and evasion procedures that would be undertaken in a time of an emergency;
 - v) identification of the designated evacuation routes and flood refuges; and
 - vi) details of flood preparedness and awareness procedures for residents and visitors to the site.

- d) a **Stormwater Management Plan** to outline measures to mitigate impacts of stormwater run-off from and within the premises. This plan shall address the requirements of Council and shall include, but not necessarily be limited to:
- i) details of all relevant stormwater control infrastructure;
 - ii) procedures for the installation and maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek;
 - iii) a demonstration of consistency with the stormwater management plan for the catchment and any relevant stormwater guidelines prepared by Council;
 - iv) details of the monitoring program, as required by condition 5.11, to monitor stormwater flows from the site; and
 - v) details of any contingency measures that would be followed to ensure the protection of neighbouring waterways and wetlands should an accident or emergency occur at the site.
- e) a **Landscape Management Plan** to outline measures to ensure appropriate development and maintenance of landscaping on the site. The Plan shall address the requirements of Council and shall include, but not necessarily be limited to:
- i) details of existing and proposed landscaping to be undertaken on the site with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, residential receptors and the railway line;
 - ii) details of landscape works to improve the condition of the riparian zone along the boundary of Lot 1 DP 874409 and Ironbark Creek;
 - iii) maximisation of flora species endemic to the locality in landscaping the site;
 - iv) measures to ensure general consistency with the relevant guidance provided in *Planning for Bushfire Protection* (NSW Rural Fire Service and PlanningNSW, 2001);
 - v) a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species; and
 - vi) a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle sight distances in accordance with RTA requirements.
- f) a **Waste Management Plan** to outline measures to minimise the production and impact of wastes generated at the development. The Plan shall include, but not necessarily be limited to:
- i) identification of the types and quantities of waste that would be generated during operations, and the standards and performance measures for dealing with this waste;
 - ii) ³⁰a description of appropriate procedures that will be implemented to ensure that all scrap, dust and litter is contained within the designated receipt and load out areas;
 - iii) a detailed description of how this waste would be reused, recycled, and if necessary, appropriately treated and disposed of in accordance with the EPA's guidelines on the *Assessment, Classification & Management of Liquid and Non-Liquid Waste*;
 - iv) a description of how the effectiveness of these actions and measures would be monitored over time; and
 - v) a description of what procedures would be followed to ensure compliance if any non-compliance is detected.

³⁰ Incorporates a EPA General Term of Approval (E1.3)

8. ENVIRONMENTAL REPORTING

Incident Reporting

- 8.1 The Applicant shall notify the Director-General of any incident with actual or potential significant off-site impacts on people or the biophysical environment as soon as practicable after the occurrence of the incident. The Applicant shall provide written details of the incident to the Director-General within seven days of the date on which the incident occurred.
- 8.2 The Applicant shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this consent, reported in accordance with condition 8.1 of this consent, within such period as the Director-General may agree.

Annual Performance Reporting

- 8.3 The Applicant shall, throughout the life of the development, prepare and submit for the approval of the Director-General, an **Annual Environmental Management Report** (AEMR). The AEMR shall review the performance of the development against the Operation Environmental Management Plan (refer to condition 7.4 of this consent), the conditions of this consent and other licences and approvals relating to the development. The AEMR shall include, but not necessarily be limited to:
- a) details of compliance with the conditions of this consent;
 - b) a comparison of the environmental impacts and performance of the development against the environmental impacts and performance predicted in those documents listed under condition 1.2 of this consent;
 - c) details of any complaints received in relation to the operation, an overview of how these complaints were handled, and the results of any actions taken by the Applicant to address the complaint;
 - d) results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person; and
 - e) a list of all occasions in the preceding twelve-month period when environmental performance goals for the development have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident.

The Applicant shall submit a copy of the AEMR to the Director-General and Council every year, with the first AEMR to be submitted no later than twelve months after the commencement of operation.

- 8.4 The Director-General may require the Applicant to address certain matters in relation to the environmental performance of the development, in response to review of the Annual Environmental Report and any comments received from COUNCIL. Any action required to be undertaken shall be completed within such period as the Director-General may agree.

* Condition 4.8C (as deleted by MOD-49-3-2005-i): Prior to the commencement of operation of the development and with the prior agreement of St Josephs Catholic Care of the Aged, the Applicant shall lodge a development application with the relevant consent authority (if development consent is required under the *Environmental Planning and Assessment Act 1979*) for the construction of a sound barrier of at least three metres in height on the St Josephs Catholic Care of the Aged site to mitigate noise impacts from the development on that land. Any such development application shall reflect the results of consultation(s) with representatives of the St Josephs Catholic Care of the Aged facility, in relation to that group's requirements for the barrier (for example, location, appearance, construction or maintenance requirements).

[†] Condition 4.8D (as deleted by MOD-49-3-2005-i): The Applicant shall bear the full cost of the sound barrier referred to under condition 4.8C of this consent, and shall commence construction of the sound barrier as soon as practicable after obtaining all relevant and necessary development consents and approvals. The Applicant shall complete construction of the sound barrier within six months of commencement of operation of the development, unless otherwise agreed by the Director-General

[‡] Previously modified by MOD-37-3-2004

[§] Previously modified by MOD-37-3-2004

^{**} Previously modified by MOD-37-3-2004

^{††} Previously modified by MOD-37-3-2004

^{‡‡} Previously modified by MOD-45-4-2004-i

Appendix B

Environment Protection
Licence – 7 October
2021

Licence Variation

Licence - 5345



ONESTEEL RECYCLING PTY LIMITED
Trading as INFRABUILD RECYCLING
ABN 28 002 707 262 ACN 002 707 262
Via email at: lesley.harpeng@infrabuild.com

Attention: Ms Lesley Harpeng

Notice Number 1609187
File Number EF13/3388, DOC21/841003-1
Date 07-Oct-2021

NOTICE OF VARIATION OF LICENCE NO. 5345

Why the EPA is writing to you

- A. ONESTEEL RECYCLING PTY LIMITED Trading as INFRABUILD RECYCLING ("Infrabuild") is the holder of Environment Protection Licence No. 5345 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at 14 SPARKE STREET, HEXHAM, NSW, 2322 ("the premises").
- B. On 28 May 2019, a Surface Water Characterisation Study was added to the licence as Pollution Reduction Study (PRS) 5. PRS 5 required that an updated water balance model be prepared for the Premises; a water characterisation assessment for water collected and discharged; an impact assessment for water based on the discharge characterisation; and a surface water mitigation and monitoring plan be prepared for the Premises.
- C. The requirements of PRS 5 were complied with in February 2021 when the final report, being the Surface Water Characterisation Study Report (AECOM, 2021), was submitted to the EPA. The monitoring recommendations and mitigation measures identified in the Surface Water Characterisation Study Report have been reviewed.
- D. A Surface Water Mitigation and Monitoring Pollution Reduction Program (PRP) has now been added to the licence which requires surface water mitigation measures and surface water monitoring requirements, as identified in the Surface Water Characterisation Study Report, to be implemented at the Premises.
- E. Surface water monitoring points and monitoring requirements have been added to the licence for the purpose of collecting representative data from site discharges before and after mitigation measures are put in place to enable the effectiveness of those measures to be assessed.
- F. In addition, site water management and erosion and sediment control operating conditions have been added to the licence to reflect the requirements of the premises.

Licence Variation



- G. On 28 May 2019, the requirement to undertake a Dust Mitigation Pollution Reduction Study (PRS) was added to the licence following a review of Infrabuild's dust deposition monitoring, as reported in the Annual Environmental Management Reports (2014-2017), which indicated significant dust impacts at the boundary of the premises.
- H. Site inspections by EPA officers, along with dust complaints, also reported airborne dust emissions migrating beyond the premises boundary.
- I. On 2 September 2019, Infrabuild submitted a Dust Mitigation Report (AECOM, 2019) to the EPA as required by the Dust Mitigation PRS 7 licence condition.
- J. On 30 November 2020, the EPA issued Infrabuild with a Penalty Notice for the emission of dust from the premises, resulting in a contravention of a licence condition, an offence under section 64 of the Act.
- K. The Dust Mitigation Report recommended that an Air Quality Management Plan which identifies key dust sources, relevant control strategies, monitoring procedures and incorporates recommended mitigation measures as identified in the Dust Mitigation Report, should be developed for the Premises.
- L. PRS 9 has been added to the licence which requires that an Air Quality Management Plan is prepared for the premises.
- M. On 12 August 2021, the EPA sent Infrabuild a draft licence variation (Notice 1609187) for review.
- N. On 30 August 2021, the EPA received a letter from Infrabuild which included comments on Notice 1609187.
- O. The EPA has considered the comments provided by Infrabuild and has varied the licence as detailed below.

What you are required to do

Please carefully read the attached licence document and ensure that you comply with the conditions. You are reminded that it is an offence under the *Protection of the Environment Operations Act 1997* if any condition of a licence is contravened by any person.

If you have any questions in relation to this matter please contact Emily Rindfleish on (02) 4908 6852.

A handwritten signature in black ink, appearing to read 'KG', is positioned above the printed name of the signatory.

.....
Karen Gallagher
Acting Unit Head
Environment Protection Authority
(by Delegation)

Licence Variation



VARIATION OF LICENCE NO. 5345

1. By this notice the EPA varies licence No. 5345. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence:
 - Condition P1.2 - Water monitoring points have been added the licence.
 - Condition O4.1 - The emergency response condition has been upgraded and changed to a Note.
 - Condition O7.5 - Site grading condition has been added to the licence.
 - Condition O7.6 - Erosion and sediment control condition has been added to the licence.
 - Condition M2.2 - Water monitoring requirements have been added to the licence.
 - Condition M2.3 - Monitoring at Point 6, within Ironbark Creek, must be undertaken on an outgoing tide and as close as possible to low tide within this section of the creek.
 - Condition M2.4 - Air Monitoring Requirements for Point 1 have been changed from quarterly to annually.
 - Condition G2.1 - The 'Completed Programs' table has been upgraded to add completed Pollution Reduction Studies 5 and 7.
 - Condition U1.1 to U1.11 - Pollution Reduction Study 5 - Surface Water Characterisation, has been removed from the licence as this is now completed.
 - Condition U2.1 to U2.5 - Pollution Reduction Program 8 - Surface Water Mitigation and Monitoring has been added to the licence.
 - Condition U3.1 to U3.2 - Pollution Reduction Study 7 - Dust Mitigation Study, has been removed from the licence as this has been completed.
 - Condition U3.1 - Pollution Reduction Study 9 - Air Quality Management Plan has been added to the licence.

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (<http://www.epa.nsw.gov.au/prpoeo/index.htm>) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

Licence Variation



When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).



Environment Protection Licence

Licence - 5345

<u>Licence Details</u>	
Number:	5345
Anniversary Date:	19-December

<u>Licensee</u>
ONESTEEL RECYCLING PTY LIMITED
PO BOX 329
LIVERPOOL NSW 2170

<u>Premises</u>
ONESTEEL RECYCLING PTY LIMITED
14 SPARKE STREET
HEXHAM NSW 2322

<u>Scheduled Activity</u>
Metallurgical activities
Waste storage

<u>Fee Based Activity</u>	<u>Scale</u>
Metal waste generation	> 100 T annual volume of waste generated or stored
Scrap metal processing	> 100000-500000 T annual production capacity
Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Any listed waste type stored

<u>Contact Us</u>
NSW EPA
4 Parramatta Square
12 Darcy Street
PARRAMATTA NSW 2150
Phone: 131 555
Email: info@epa.nsw.gov.au
Locked Bag 5022
PARRAMATTA NSW 2124



Environment Protection Licence

Licence - 5345

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Environment Protection Licence

Licence - 5345

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Environment Protection Licence

Licence - 5345

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).



Environment Protection Licence

Licence - 5345

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

ONESTEEL RECYCLING PTY LIMITED
PO BOX 329
LIVERPOOL NSW 2170

subject to the conditions which follow.

Environment Protection Licence

Licence - 5345

1 Administrative Conditions

A1 What the licence authorises and regulates

- A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Metallurgical activities	Metal waste generation	> 100 T annual volume of waste generated or stored
Metallurgical activities	Scrap metal processing	> 100000 - 500000 T annual production capacity
Waste storage	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Any listed waste type stored

A2 Premises or plant to which this licence applies

- A2.1 The licence applies to the following premises:

Premises Details
ONESTEEL RECYCLING PTY LIMITED
14 SPARKE STREET
HEXHAM
NSW 2322
PREMISES AS SHOWN ON PLAN TITLED "PLAN OF CONSOLIDATION OVER LOT 1 DP 1085880, LOT 11 DP 1169199 & LOT 1 DP 874409" PREPARED BY ADAM ORTIGER, REGISTERED DATE OF 27/9/2012 (EPA FILE DOC13/49448), WHICH COMPRISES LOT 1 DP 1176316.

A3 Information supplied to the EPA

- A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:

- a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and

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b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified in this licence for the purposes of monitoring and/or the setting of limits for the emission of pollutants to the air from the point.

<i>Air</i>			
EPA identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
1	Discharge to air Discharge quality monitoring	Discharge to air Discharge quality monitoring	Monitoring point located on baghouse stack

P1.2 The following points referred to in the table are identified in this licence for the purposes of the monitoring and/or the setting of limits for discharges of pollutants to water from the point.

<i>Water and land</i>			
EPA Identification no.	Type of Monitoring Point	Type of Discharge Point	Location Description
2	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Ferrous metal shredder yard - discharge point into western boundary swale, labelled as SW02B on Surface Water Mitigation and Monitoring Plan Figure 9, dated 22 December 2020 (DOC21/434095).
3	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Sparke Street sediment trap discharge point into western boundary swale, labelled as SW03B on Surface Water Mitigation and Monitoring Plan Figure 9, dated 22 December 2020 (DOC21/434095).
4	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Non-ferrous metal yard discharge point into Ironbark Creek (water which has discharged from geotextile bags), labelled as SW05B on Surface Water Mitigation and Monitoring Plan Figure 9, dated 22 December 2020 (DOC21/434095).

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5	Discharge to waters Discharge quality monitoring	Discharge to waters Discharge quality monitoring	Western boundary swale discharge point into Ironbark Creek, labelled as SW06 on Surface Water Mitigation and Monitoring Plan Figure 9, dated 22 December 2020 (DOC21/434095).
6	Ambient water monitoring		Upstream monitoring location within Ironbark Creek - on western side of railway line within Ironbark Creek, labelled as SW07A on Attachment A: Proposed sampling point SW07A (DOC21/483404-3).

3 Limit Conditions

L1 Pollution of waters

- L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Concentration limits

- L2.1 For each monitoring/discharge point or utilisation area specified in the table\ below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.
- L2.2 Air Concentration Limits

POINT 1

Pollutant	Units of measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period
Total Solid Particles	milligrams per cubic metre	100	Dry, 273 K, 101.3 kPa		1 hour
Mercury	milligrams per cubic metre	1.0	Dry, 273 K, 101.3 kPa		1 hour
Lead	milligrams per cubic metre	5.0	Dry, 273 K, 101.3 kPa		1 hour

L3 Waste

- L3.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below.

Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below.

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Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below.

This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	Scrap metal			
NA	Scrap metal			No more than 500000 Tonnes can be processed per year
J120	Waste oil/hydrocarbons mixtures/emulsions in water			
D220	Lead; lead compounds			

L4 Noise limits

L4.1 Noise from the premises must not exceed the limits specified in the table below:

Location	Day LAeq(15 minute)	Evening LAeq(15 minu	Night LAeq(15 minute	Night LA1(1 minute)
Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55
St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56
Any operating industrial premises affected by noise from the premises	70	70	70	N/A

L4.2 The noise limits above comply when measured or computed at any point within one metre of the boundary of any affected residential premises.

5dB(A) must be added to the measured level if the noise is substantially tonal or impulsive in character.

L4.3 Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sundays and Public Holidays.

Evening is defined as the period from 6pm to 10pm.

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Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sundays and Public Holidays.

- L4.4 The noise emission limits identified in Condition L4.1 apply under the following meteorological conditions;
- Wind speeds up to 3m/s at 10 metres above ground level; and
 - Temperature inversion conditions of up to 3oC/100m.

L5 Hours of operation

- L5.1 The shredder must only be operated between the hours of 0700 and 1800 Monday to Saturday, and at no time on Sundays and Public Holidays, except, where the following requirements are complied with the shredder may be operated between the hours of 1800 and 2200, Monday to Friday:
- an unplanned and unforeseeable situation arises at the premises by which the operation of the NSW remelt steel industry is at risk of being negatively impacted by a shortage of shredded scrap, and
 - the licensee informs the EPA Hunter Office, and all affected noise receptors within a 1.5Km radius of the LYNX shredder, in writing at least 24 hours prior to commencing out of hours operation, and
 - an officer appointed by the licensee is on site, solely for the purpose of ensuring compliance with noise limits at various locations.

Note: (1) This licence does not limit the hours during which any activities, other than shredder operation as above, may be carried out at the premises, provided that full compliance with the noise limits of this licence is maintained.

- Note: (2) For the purpose of this licence "All noise receptors within 1.5 Km of the LYNX shredder" is limited to:
- The noticeboards of Saint Joseph's Retirement Village, Hexham.
 - The residences on Old Maitland Road, west of Saint Joseph's Retirement Village.
 - The residences on Pacific Highway and intersecting streets, Hexham between Ironbark Creek and No 59 Pacific Highway, Hexham.

Note: (3) The applicant may seek approval of the EPA to extend the hours of operation of the LYNX shredder by increments up to 22:00.

Any request for approval shall only be made provided:

- the application is based on 6 months appropriate and adequate data with the plant operating at design capacity.
- full compliance with all noise limits has been achieved since commissioning.
- the management of explosions can be demonstrated, and impacts have been mitigated.
- the data supplied demonstrates the applicant's ability to comply with the evening noise limits set out in this licence.
- that the applicant accepts that any extended hours of operation will be withdrawn should the evening noise criteria be regularly exceeded or explosions become unmanageable, and if the impacts have not been mitigated by the licensee.

L6 Potentially offensive odour

- L6.1 No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.

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Note: Section 129 of the Protection of the Environment Operations Act 1997, provides that the licensee must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising odour.

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.

This includes:

- a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
- b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:

- a) must be maintained in a proper and efficient condition; and
- b) must be operated in a proper and efficient manner.

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O3.3 Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.

O4 Emergency response

Note: The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The PIRMP must be developed in accordance with the requirements in Part 5.7A of the Protection of the Environment Operations (POEO) Act 1997 and POEO regulations. The licensee must keep the incident response plan on the premises at all times. The incident response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident.

O5 Processes and management

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- O5.1 Where practicable, the licensee must implement appropriate procedures to ensure that all scrap, dust and litter is contained within the designated receiving and load out areas.
- O5.2 All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.
- O5.3 Bunds must:
- a) have walls and floors constructed of impervious materials;
 - b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed);
 - c) have floors graded to a collection sump; and
 - d) not have a drain valve incorporated in the bund structure,
- or be constructed and operated in a manner that achieves the same environmental outcome.

O6 Waste management

- O6.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines as in force from time to time.
- O6.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O7 Other operating conditions

- O7.1 All process related fabric filters installed on the premises shall be fitted with a bag leak detection and alarm system.
- O7.2 There must be no incineration or open burning of any material(s) on the premises, except as specifically authorised by the EPA.
- O7.3 The licensee must ensure that activities undertaken at the premises do not cause visible emissions of smoke or fume beyond the boundary of the premises.
- O7.4 The licensee must ensure that activities are conducted in an environmentally satisfactory manner. So as to minimise and prevent the pollution of air and water the licensee must:
- (a) Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road.
 - (b) The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road.
- O7.5 The licensee must maintain site grading and profiles to prevent surface water ponding and allow for surface water to flow to formalised surface water management systems.
- O7.6 The licensee must ensure that all erosion and sediment control measures installed on the premises are inspected and works undertaken to repair and maintain these controls:



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- a) at least weekly, and
- b) immediately before site closure, and
- c) immediately following rainfall events that cause runoff.

The licensee must record all such inspections including observations and works undertaken to repair and maintain erosion and sediment controls.

Note: For the purpose of the condition above, 'Site Closure' means a period when the premises is unoccupied for more than 24 hours.

5 Monitoring and Recording Conditions

M1 Monitoring records

- M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.
- M1.2 All records required to be kept by this licence must be:
- a) in a legible form, or in a form that can readily be reduced to a legible form;
 - b) kept for at least 4 years after the monitoring or event to which they relate took place; and
 - c) produced in a legible form to any authorised officer of the EPA who asks to see them.
- M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
- a) the date(s) on which the sample was taken;
 - b) the time(s) at which the sample was collected;
 - c) the point at which the sample was taken; and
 - d) the name of the person who collected the sample.

M2 Requirement to monitor concentration of pollutants discharged

- M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the licensee must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The licensee must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns:
- M2.2 Water and/ or Land Monitoring Requirements

POINT 2,3,6

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Arsenic (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample

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Benzene	micrograms per litre	Quarterly during discharge	Grab sample
Benzo(a)anthracene	micrograms per litre	Quarterly during discharge	Grab sample
Benzo(a)pyrene	micrograms per litre	Quarterly during discharge	Grab sample
Boron (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Cadmium (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Calcium	milligrams per litre	Quarterly during discharge	Grab sample
Chromium (hexavalent)	milligrams per litre	Quarterly during discharge	Grab sample
Copper (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Electrical conductivity	milligrams per litre	Quarterly during discharge	Grab sample
Ethyl benzene	micrograms per litre	Quarterly during discharge	Grab sample
Ethylene glycol	micrograms per litre	Quarterly during discharge	Grab sample
Iron	milligrams per litre	Quarterly during discharge	Grab sample
Iron (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Lead (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Magnesium	milligrams per litre	Quarterly during discharge	Grab sample
Manganese (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Mercury (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Molybdenum (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Nickel (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample
Nitrate	milligrams per litre	Quarterly during discharge	Grab sample
Nitrite	milligrams per litre	Quarterly during discharge	Grab sample
Nitrogen (total)	milligrams per litre	Quarterly during discharge	Grab sample
Oil and Grease	milligrams per litre	Quarterly during discharge	Grab sample
Perfluorooctane sulphonate (PFOS)	micrograms per litre	Quarterly during discharge	Grab sample
Perfluorooctanoic acid (PFOA)	micrograms per litre	Quarterly during discharge	Grab sample
pH	pH	Quarterly during discharge	Grab sample
Phenanthrene	micrograms per litre	Quarterly during discharge	Grab sample

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Phosphorus (total)	milligrams per litre	Quarterly during discharge	Grab sample
Potassium	milligrams per litre	Quarterly during discharge	Grab sample
Sodium	milligrams per litre	Quarterly during discharge	Grab sample
Toluene	micrograms per litre	Quarterly during discharge	Grab sample
Total Kjeldahl Nitrogen	milligrams per litre	Quarterly during discharge	Grab sample
Total PAHs	milligrams per litre	Quarterly during discharge	Grab sample
Total suspended solids	milligrams per litre	Quarterly during discharge	Grab sample
TRH	micrograms per litre	Quarterly during discharge	Grab sample
Turbidity	nephelometric turbidity units	Quarterly during discharge	Grab sample
Xylene	micrograms per litre	Quarterly during discharge	Grab sample
Zinc (dissolved)	milligrams per litre	Quarterly during discharge	Grab sample

POINT 4,5

Pollutant	Units of measure	Frequency	Sampling Method
Aluminium (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Arsenic (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Benzene	micrograms per litre	Monthly during discharge	Grab sample
Benzo(a)anthracene	micrograms per litre	Monthly during discharge	Grab sample
Benzo(a)pyrene	micrograms per litre	Monthly during discharge	Grab sample
Boron (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Cadmium (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Calcium	milligrams per litre	Monthly during discharge	Grab sample
Chromium (hexavalent)	milligrams per litre	Monthly during discharge	Grab sample
Copper (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Electrical conductivity	microsiemens per centimetre	Monthly during discharge	Grab sample
Ethyl benzene	micrograms per litre	Monthly during discharge	Grab sample
Ethylene glycol	micrograms per litre	Monthly during discharge	Grab sample
Iron	milligrams per litre	Monthly during discharge	Grab sample

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Iron (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Lead (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Magnesium	milligrams per litre	Monthly during discharge	Grab sample
Manganese (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Mercury (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Molybdenum (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Nickel (dissolved)	milligrams per litre	Monthly during discharge	Grab sample
Nitrate	milligrams per litre	Monthly during discharge	Grab sample
Nitrite	milligrams per litre	Monthly during discharge	Grab sample
Nitrogen (total)	milligrams per litre	Monthly during discharge	Grab sample
Oil and Grease	milligrams per litre	Monthly during discharge	Grab sample
Perfluorooctane sulphonate (PFOS)	micrograms per litre	Monthly during discharge	Grab sample
Perfluorooctanoic acid (PFOA)	micrograms per litre	Monthly during discharge	Grab sample
pH	pH	Monthly during discharge	Grab sample
Phenanthrene	micrograms per litre	Monthly during discharge	Grab sample
Phosphorus (total)	milligrams per litre	Monthly during discharge	Grab sample
Potassium	milligrams per litre	Monthly during discharge	Grab sample
Sodium	milligrams per litre	Monthly during discharge	Grab sample
Toluene	micrograms per litre	Monthly during discharge	Grab sample
Total Kjeldahl Nitrogen	milligrams per litre	Monthly during discharge	Grab sample
Total PAHs	milligrams per litre	Monthly during discharge	Grab sample
Total suspended solids	milligrams per litre	Monthly during discharge	Grab sample
TRH	micrograms per litre	Monthly during discharge	Grab sample
Turbidity	nephelometric turbidity units	Monthly during discharge	Grab sample
Xylene	micrograms per litre	Monthly during discharge	Grab sample
Zinc (dissolved)	milligrams per litre	Monthly during discharge	Grab sample

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M2.3 Monitoring at Point 6 must occur on an outgoing tide and must occur as close as possible to low tide within this section of Ironbark Creek.

M2.4 Air Monitoring Requirements

POINT 1

Pollutant	Units of measure	Frequency	Sampling Method
Lead	milligrams per cubic metre	Yearly	TM-12
Mercury	milligrams per cubic metre	Yearly	TM-14
PM10	micrograms per cubic metre	Yearly	OM-5
Total Solid Particles	milligrams per cubic metre	Yearly	TM-15

M3 Testing methods - concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

- a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or
- b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or
- c) if no such requirement is imposed by or under the Act or by a condition of this licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The *Protection of the Environment Operations (Clean Air) Regulation 2021* requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

M4 Weather monitoring

M4.1 Suitable instrumentation must be maintained and operated to monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units or measure, averaging period and sample at the frequency, specified opposite in the other columns.

PARAMETER	UNITS OF MEASURE	FREQUENCY	AVERAGING PERIOD	SAMPLING METHOD
Rainfall	mm	Daily	1 hour	AM-4

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Wind Speed @ 10 metres	m/s	Continuous	15 minute	AM-2 & AM-4
Wind Direction @ 10 metres	Degrees	Continuous	15 minutes	AM-2 & AM-4
Temperature @ 10 metres	Degrees Celcius	Continuous	15 minutes	AM-4
Temperature @ 2 metres	Degrees Celcius	Continuous	15 minutes	AM-4
Sigma theta @ 10 metres	Degrees	Continuous	15 minutes	AM-2 & AM-4

M5 Recording of pollution complaints

- M5.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.
- M5.2 The record must include details of the following:
- a) the date and time of the complaint;
 - b) the method by which the complaint was made;
 - c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
 - d) the nature of the complaint;
 - e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the licensee, the reasons why no action was taken.
- M5.3 The record of a complaint must be kept for at least 4 years after the complaint was made.
- M5.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M6 Telephone complaints line

- M6.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.
- M6.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.
- M6.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.
- M6.4 The licensee must nominate to the EPA a representative of the company that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their telephone number, must be current at all times. The nomination and contact details must be provided to the EPA's Regional Manager- Hunter at PO Box 488G, Newcastle NSW 2300.
Note: This condition does not apply until two (2) weeks after the date of issue of the variation notice to include this condition.

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M7 Other monitoring and recording conditions

- M7.1 Suitable instrumentation must be maintained and operated, in compliance with Australian Standard 2187.2 of 1993, to monitor overpressure and vibration caused by explosions on the premises.
- M7.2 The licensee is required to monitor noise emissions from the premises on a quarterly basis, to demonstrate compliance with the noise limits in Condition L4.1 of this licence.

The licensee must engage a suitably qualified and experienced acoustic consultant to undertake the noise compliance assessments.

6 Reporting Conditions

R1 Annual return documents

- R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:

1. a Statement of Compliance,
2. a Monitoring and Complaints Summary,
3. a Statement of Compliance - Licence Conditions,
4. a Statement of Compliance - Load based Fee,
5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan,
6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and
7. a Statement of Compliance - Environmental Management Systems and Practices.

At the end of each reporting period, the EPA will provide to the licensee notification that the Annual Return is due.

- R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.
- R1.3 Where this licence is transferred from the licensee to a new licensee:
- a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
 - b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.
- R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
- a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
 - b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.
- R1.5 The Annual Return for the reporting period must be supplied to the EPA via eConnect *EPA* or by registered

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post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statements of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:

- a) the licence holder; or
- b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R2 Notification of environmental harm

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which they became aware of the incident.

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:

- a) where this licence applies to premises, an event has occurred at the premises; or
 - b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
- and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:

- a) the cause, time and duration of the event;
- b) the type, volume and concentration of every pollutant discharged as a result of the event;
- c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
- d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;

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- e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
- f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
- g) any other relevant matters.

- R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.
- R3.5 The licensee is required to supply a report to be submitted with the annual return, regarding the quarterly noise compliance assessments referred to in Condition M7.2 of this licence.

R4 Other reporting conditions

Waste reporting

- R4.1 The Licensee must provide the following information to the EPA via the Waste and Resource Reporting Portal (WARRP) within 26 days after the end of each month:
- a) the quantity and source of the waste received at the Premises during the month to which the report relates;
 - b) the quantity of shredder floc transported from the Premises for disposal at a scheduled waste disposal facility during the month to which the report relates;
 - c) the waste types (determined in accordance with the Waste Levy Guidelines) of waste received at the Premises during the month to which the report relates;
 - d) the waste stream of waste received at the Premises and transported from the Premises during the month to which the report relates;
 - e) the destination to which the shredder floc generated during the month to which the report relates is being transported for disposal; and
 - f) any waste, including shredder floc, that is being transported off the Premises under a resource recovery order.

Annual Shredder Floc Performance Report

- R4.2 The Licensee must provide an Annual Shredder Floc Performance Report to the EPA within 60 days after the end of the financial year period for the next five years, until 30 June 2024, that details, for the previous financial year period:
- a) performance against the shredder floc benchmark of an annual recovery rate of 77.5% from the facilities scrap metal infeed and a maximum shredder floc generation rate of 22.5% from this same infeed material;
 - b) quantity in tonnes of:
 - i. scrap metal infeed processed,
 - ii. shredder floc generated,
 - iii. scrap metal recovered from processing,
 - iv. shredder floc disposed of at a scheduled waste disposal facility; and
 - c) measures taken to improve the resource recovery rate of scrap metal and reduce the amount of shredder floc generated and disposed of at scheduled waste disposal facilities.

The Annual Shredder Floc Performance Report must be provided to
RegOps.MetroRegulation@epa.nsw.gov.au.

- R4.3 The following records must be kept for 6 years and made available to the EPA on request:

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- a) information required to be provided in WARRP within 26 days after the end of each month, as specified in condition R4.1; and
- b) information required to compile the Annual Shredder Floc Performance Report, as specified in condition R4.2.

R4.4 For condition R4.1 to R4.3:

- a) *Shredder floc* means residual waste generated directly from the shredding of scrap metal.
- b) *WARRP* means the NSW EPA Waste and Resource Reporting Portal at: <http://warrp.epa.nsw.gov.au/default.aspx>.
- c) *financial year period* means the period of 12 months commencing on 1 July in any year.

7 General Conditions

G1 Copy of licence kept at the premises or plant

- G1.1 A copy of this licence must be kept at the premises to which the licence applies.
- G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.
- G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

G2 Other general conditions

G2.1 Completed Programs

Program	Description	Completed Date
PRP 1 - Investigation to Reduce Smoke and Fume	Study smoke and fume reduction techniques when oxyacetylene cutting steel. Reduction of air quality emissions.	21-December-2004
PRP 2 - Investigate alternatives to reduce emissions from premises	Investigate alternatives to reduce emissions from oxy/gas cutting operations to the atmosphere. Prevent smoke and gas emissions into the environment.	01-February-2008
PRP 3 - Noise Reduction Investigation	Licensee to provide details in the form of a report of remediation measures to be implemented to reduce noise impacts to ensure compliance is met. Reduction of noise emissions and compliance with EPL.	02-November-2007
PRP 4 - Stormwater Quality Investigation	Investigation into quality of stormwater discharging the premises to assess compliance with section 120 of the POEO Act.	29-November-2013
PRS 5 - Surface Water Characterisation	Investigation into pollutants of concern in surface water generated at the premises and discharged into Ironbark Creek	04-February-2021

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PRS 7 - Dust Mitigation
Study

Investigate and implement dust mitigation
options such that dust emissions from the
premises are minimised.

02-September-2019

8 Pollution Studies and Reduction Programs

U1 PRS 6 - Soil and Groundwater Assessment

Stage 1 - Preliminary Site Investigation

- U1.1 The Licensee must prepare a Preliminary Site Investigation (PSI). The PSI must include (but be not limited to);
- i) Review of current and historical site activities, and site and surrounding land use history to identify potential sources of contamination;
 - ii) Identify contaminants of potential concern and potentially affected media (for example soil, groundwater, surface water, sediment);
 - iii) Consider the hydrogeological setting;
 - iv) Develop an initial conceptual site model for the Premises and identify gaps that need to be addressed to assess the potential risks to Ironbark Creek; and
 - v) A scope of works to undertake a detailed site investigation.

The Preliminary Site Investigation must be submitted to the EPA for review and comment by no later than Wednesday 14 August 2019.

Stage 2 - Detailed Site Investigation and Report

- U1.2 The Licensee must undertake a Detailed Site Investigation (DSI). The DSI must include (but be not limited to);
- i) Sampling from appropriate media (as identified by the PSI);
 - ii) Assessment of the contaminants of potential concern against the Investigation Levels as prescribed by NEPM 2013; and
 - iii) A Quantitative Risk Assessment (QRA) to assess risks to Ironbark Creek (if required based on the sampling results).

The Licensee must submit to the EPA by Friday 12 June 2020, the following data:

- a site plan showing the final sampling locations;
- borelogs; and
- summary tables of analytical results compared to adopted assessment criteria for all media sampled.

- U1.3 The Licensee must prepare a Detailed Site Investigation Report based on the findings of the Detailed Site Investigation Study required by condition U2.2.
- The Detailed Site Investigation Report must include (but not be limited to) a conclusion on the potential risks from any identified site contamination to Ironbark Creek.

The Detailed Site Investigation Report must be submitted to the EPA by Friday 24 July 2020.

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- U1.4 The Preliminary and Detailed Site Investigations must be completed in accordance the requirements of the National Environmental Protection (assessment of contamination) Measures 2013, as amended. Additional guidance that should be considered (but not limited to) includes:
- NSW EPA Sampling Design Guidelines
 - Guidelines for the NSW Site Auditor Scheme (3rd edition) 2017
 - Guidelines for Consultants Reporting on Contaminated Sites
- U1.5 The Preliminary and Detailed Site Investigation Reports must be prepared, reviewed and approved by a practitioner certified by an EPA-recognised scheme.

U2 PRP 8 - Surface Water Mitigation and Monitoring

Note: Background

On 28 May 2019, a Surface Water Characterisation Study was added to the licence to as Pollution Reduction Study (PRS) 5. The requirements of PRS 5 were completed in February 2021.

The Surface Water Characterisation PRS was used to inform appropriate mitigation measures and recommend surface water monitoring requirements for the Premises.

The monitoring and mitigation measures identified in the Surface Water Characterisation Study have been assessed and relevant requirements included in this Pollution Reduction Program along with surface water monitoring requirements.

Mitigation Measures

- U2.1 The licensee must upgrade the Non-ferrous Facility Sump system to be able to facilitate a pump rate of 220 litres/minute of water from the sump to the water holding tanks by 30 June 2022.
- U2.2 The licensee must install gross pollutant traps for the capture of larger debris from surface flows prior to entering the Non-ferrous Facility Sump by no later than 30 June 2022.
- U2.3 The licensee must formalise the surface water flow path within the Non-ferrous Yard where the site falls towards Ironbark Creek, including bund improvement works, to ensure water is contained on site and that no surface water runoff is directly discharged to Ironbark Creek without prior treatment. These works must be completed by 30 June 2022.

Monitoring

- U2.4 The monitoring required to be undertaken as set out in Condition M2.2 must be undertaken for at least 3 sampling events prior to the implementation of mitigation measures as set out in Conditions U2.1 to U2.3 to allow for the effectiveness of those mitigation measures to be assessed.

Note: The surface water monitoring results will be reviewed following a minimum of 3 sampling events post the installation of the mitigation measures as set out in Condition U2.1 to U2.3. Following this, surface water monitoring and management for the Premises will be revised accordingly.

Reporting

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- U2.5 by 30 June 2022 the licensee must supply a report to the EPA, at RegOps.MetroRegulation@epa.nsw.gov.au, detailing all works that have been completed under this Pollution Reduction Program.

U3 PRS 9 - Air Quality Management Plan

Note: Background

On 28 May 2019, the requirement to prepare a Dust Mitigation Study was added to the licence following a review of the licensee's dust deposition monitoring, as reported in the Annual Environmental Management Reports (2014-2017) (the reports). The reports indicated significant dust impacts at the boundary of the Premises.

The requirements of the Dust Mitigation Study were complied with by September 2019 and a Dust Mitigation Report (AECOM, 2019) was submitted to the EPA. The Dust Mitigation Report identified a range of dust mitigation options for the Premises, including the need to develop an Air Quality Management Plan to ensure that site operations are managed in a way which minimises dust generation at the Premises.

On 30 November 2020, the EPA issued the licensee with a Penalty Notice for the emission of dust from the Premises. In response to the incident, the licensee has implemented some of the mitigation measures identified in the Dust Mitigation Report.

In order to formalise the remaining recommendations of the Dust Mitigation Report, the EPA has required an Air Quality Management Plan to be developed as required by this Pollution Reduction Study.

- U3.1 The licensee must prepare an Air Quality Management Plan (AQMP). The AQMP must include, at a minimum:

1. Identification of key dust sources;
2. Identification of relevant control strategies for key dust sources;
3. Identification of dust monitoring procedures for the Premises including an assessment of the current dust deposition monitoring locations and identification of additional dust deposition monitoring locations where required;
4. An Action Plan for the implementation of dust mitigation measures as identified in the Dust Mitigation Study Report (AECOM, 2019), including a proposed timetable for the implementation of each mitigation measure;
5. Operating procedures for weather conditions prone to high dust generation;
6. A schedule for site inspections undertaken by on-site personal to monitor dust; and
7. Identification of training requirements for on-site personal for best practice dust mitigation.

The AQMP must be emailed to the EPA at RegOps.MetroRegulation@epa.nsw.gov.au by no later than 13 December 2021.

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Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

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flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the <i>Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales</i> .



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TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non - putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 31-March-2000



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End Notes	
1	Licence transferred through application 140291, approved on 09-Apr-2001, which came into effect on 19-Dec-2000.
2	Licence varied by Admin corrections to archived record, issued on 04-Dec-2002, which came into effect on 04-Dec-2002.
3	Licence varied by notice 1030201, issued on 31-Aug-2004, which came into effect on 25-Sep-2004.
4	Licence varied by notice 1061534, issued on 23-Feb-2007, which came into effect on 23-Feb-2007.
5	Licence varied by notice 1071271, issued on 30-Mar-2007, which came into effect on 30-Mar-2007.
6	Licence varied by notice 1078548, issued on 06-Nov-2007, which came into effect on 06-Nov-2007.
7	Licence varied by notice 1081261, issued on 17-Dec-2007, which came into effect on 17-Dec-2007.
8	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
9	Licence varied by notice 1504637 issued on 11-Oct-2013
10	Licence varied by notice 1573877 issued on 28-May-2019
11	Licence varied by notice 1583567 issued on 07-Aug-2019
12	Licence varied by notice 1589850 issued on 06-Mar-2020
13	Licence varied by notice 1595084 issued on 27-May-2020
14	Licence varied by notice 1600771 issued on 27-Nov-2020

Appendix C

Operational Environmental Management Plan (OEMP)



InfraBuild

ENVIRONMENTAL MANAGEMENT PLAN

Hexham



Sparke Street, Hexham



Doc Name: Recycling Hexham Operational Environmental Management Plan
Doc No: HEX-OHSE-RM-TOOL-644
Authorised by: Hexham Operations Manager
Hexham I Drive version is the only controlled version

Issue Date: 3/17/22
Version: 4
Page 1 of 26



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1 Summary of Recuring Environmental Obligations

Obligation	When	By Whom	Document Reference
Debris removal along Sparke St	As required	Environmental Representative	S8
Noise monitoring	Quarterly	AECOM – data available to ER	S10.1 and Appendix 5
Overpressure monitoring	Continuous	Texcel – data available to ER	S10.2
St Josephs Noise Monitor	Continuous	Texcel – data available to ER	S10.3
Meteorological monitoring	Continuous	AECOM – data available to ER	S10.4
Stormwater monitoring	Twice annually*	Environmental Representative	S10.5 and Appendix 4
Stack emission monitoring	Quarterly	AECOM – data available to ER	S10.7
Community Consultative Committee (CCC)	Quarterly or as agreed by CCC	Environmental Representative	S13
Independent Environmental Audit	Every 3 years**	Environmental Representative	S14.2
Annual Environmental Monitoring Report	Annually	AECOM	S15.1
Monthly EPA Waste Reports	Monthly	Environmental Representative	S15.2

**obligation subject to confirmation by NSW EPA via licence amendment*

***next due December 2023*

2 Operation Environmental Management Plan

2.1 Purpose

Site Management shall use the Operation Environmental Management Plan (OEMP), and their Employees, Contractors and Subcontractors whom are required to carry out on-site work related to the Shredder Plant Operation.

The purpose of this plan is to define strategies, responsibilities, requirements and procedures that will ensure compliance with Legislated Requirements and Consent Authorities conditions regarding Environmental Performance of Shredder Plant Operations.

The plan provides for the identification of high-risk tasks and the control of associated risk at each stage of the Shredder Mill Operation process by both Recycling Personnel and their Contractors.

2.2 Objectives

The objectives of the Operation Environmental Management Plan are to:

- Ensure that operation of the facility is performed and maintained to meet or exceed the requirements of relevant Environmental Legislation and operating conditions as determined by Consent Authorities
- Facilitate and maintain effective lines of consultation regarding Environmental Performance issues between Operations Management, Contract Personnel, Consent



Authorities and the Community

- Minimise any adverse environmental impacts associated with operation of the development
- Provide for on-going environmental management of the development
- Provide for regular monitoring and reporting of Operation Environmental Performance of the development

2.3 Scope

The Plan applies to the Recycling Metal Shredding Facility located at Sparke Street, Hexham, NSW.

3 GFG Alliance Environmental Policy

The Recycling Metal Shredder Facility at Hexham is committed to ensuring its business operates in an environmentally responsible manner having regard to all stakeholders' interests.

The environmental policy endorsed by GFG Alliance can be found at **Appendix 1** of this document.

4 General Standards

4.1 Legislation and Consent Authority Conditions

- The Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (Waste) Regulation 2014
- Determination of a Development Application DA No. 345-7-2003-i, lodged with the Department of Infrastructure, Planning and Natural Resources on 25th July 2003. Version – MOD-49-3-2005-i- approved 17 May 2005 (the "DPIE Consent")
- Environment Protection Authority – Environment Protection Licence # 5345 and updated from time to time. [Online: <https://apps.epa.nsw.gov.au/prpoeoapp/>]
- Work Health & Safety Act 2011
- Work Health & Safety Regulations 2017

4.2 Infrabuild Recycling WHSE Management System

Recycling has several workplace health and safety procedures which support this Operational Environmental Management Plan:

- PRO001 - Responsibilities, Authorities and Accountability Procedure
- PRO008 - Inspection, Testing and Monitoring Procedure
- PRO018 - Incoming Scrap Deliveries Procedure
- PRO019 - Lead Acid Batteries Procedure
- PRO021 - Stockpile Management Procedure
- PRO035 - Hazardous Chemicals Procedure
- PRO045 - Asbestos Management Procedure
- PRO051 - Radiation Detection and Management Procedure
- PRO056 - Unacceptable Scrap Manual



- PRO057 - Waste Management Procedure
- PRO071 - Scrap Car Acceptance Policy

Copies of these documents and any other relevant forms can be accessed from the internal Recycling Intranet page and are accessible by Operations Management.

4.3 Site-Specific Management Plans that support this OEMP

Recycling has several site-specific operational procedures which support this Operational Environmental Management Plan:

- Hexham Traffic Management Plan (HEX-OPS-PC-SOP-602) - includes requirements that address Consent Condition 7.5b (Transport Management Plan) and associated Driver Induction Requirements (Do's and Don'ts);
- Hexham Emergency Response Plan (HEX-OHSE-RM-TOOL-601) – includes requirements that address Consent Condition 7.5c (Flood Emergency Management Plan) and Site Management & Emergency Contact Details;
- Surface Water Mitigation and Monitoring Plan, AECOM 22 December 2020 outlines details of stormwater infrastructure and constitutes a Stormwater Management Plan for the purposes of Consent Condition 7.5d.

The following Management Plans form part of the OEMP and included as appendixes.

- Appendix 2 - Waste Management Plan (Consent Condition 7.5f)
- Appendix 3 - Landscape Management Plan (Consent Condition 7.5e)
- Appendix 4 - Stormwater Sampling Locations and Analytes (Consent Condition 7.5d)
- Appendix 5 - Noise Management Plan (Consent Condition 7.5a)

5 Definitions

- Environmental Representative (ER) - A person duly appointed by Recycling Management to represent their interests during the operation of the development.
- Authorised Officer - A person duly appointed by the Consent Authority or Government Department to represent their interests during the operation of the development.
- DPIE - NSW Department of Planning, Industry and Environment.
- EPA - NSW Environmental Protection Agency

6 Operational Roles & Responsibilities

Within the Recycling WHSE Management System, Procedure 001, Responsibilities, Authorities and Accountability Procedure outlines the Operation Roles and Responsibilities for each level of the organisation. Also, salaried employees hold a position description outlining their responsibilities. Site-specific responsibilities for Hexham personnel over and above the obligations outlined in PRO001 are outlined below.

6.1 Operations Management

- Management shall ensure to its best endeavours that the operation of the Metal Shredding Facility does not impact adversely on the environment.
- Management will ensure that all operational personnel know and understand their relevant responsibilities within the OEMP.



- Management will ensure that Metal Shredding Facility operations comply with all Relevant Legislation and Consent Authority licences and conditions of operation.
- Management will ensure as a matter of Policy that it's Metal Shredding Facility operations environmental performance is monitored periodically, reviewed and improved where appropriate.
- Management will ensure that effective arrangements for community consultation and complaints handling procedures are maintained during operation of the facility.

6.2 Operations Employees

- Employees will comply with the requirements of the OEMP.
- Employees must co-operate with Management to enable compliance with all Relevant Legislation and Consent Authority licences and conditions of operation.

Without limiting the generality of the foregoing, an employee contravenes the above if he/she;

- Fails to comply, so far as the Employee is reasonably able, with instructions given by Management.
- Fails to properly use such protective clothing and equipment as is provided or provided for, by the employer in a way the employee has been properly instructed to use it;
- Misuses or damages any equipment provided in the interests of Environmental Protection.
- Fails to report to Management any situation at the workplace that the employee has reason to believe could constitute a hazard to the environment and which the employee cannot correct.
- Fails to report to Management any injury or harm caused to the environment of which, the employee is aware of that arises during, or in connection with the employee's work.

6.3 Supervision

- Operation Management will ensure by way of inspections and audits that the Metal Shredding Facility operates in accordance with the requirements of the OEMP.
- Operations Management will provide to their Employees and Subcontractors under their control any such information, instruction, training and supervision as is necessary to enable them to perform their work in a safe and efficient manner and ensure that they are not exposed to risk or present a risk of harm to the environment.
- Operations Management must ensure that there is an adequate and reliable procedure and means of communication between an Employee or Subcontractor and the person supervising the Employee or Subcontractor.

7 Operational Conditions

7.1 Hours of Operation – Shredder

The shredder must only be operated between the hours of 0700 and 1800 Monday to Saturday, and at no time on Sundays and Public Holidays, except, where the following requirements are complied with the shredder may be operated between the hours of 1800 and 2200, Monday to Friday:

- an unplanned and unforeseeable situation arises at the premises by which the operation of the NSW re-melt steel industry is at risk of being negatively impacted by a shortage of shredded scrap, and





- Operations Management informs the EPA Hunter Office, and all affected noise receptors within a 1.5Km radius of the shredder, in writing at least 24 hours prior to commencing out of hours operation, and
- an officer appointed by Operations Management is on site, solely for ensuring compliance with noise limits at various locations.

Note "All noise receptors within 1.5 Km of the shredder" is currently limited to:

- The notice boards of Saint Joseph's Retirement Village, Hexham.
- The residences on Old Maitland Road, west of Saint Joseph's Retirement Village.
- The residences on Pacific Highway and intersecting streets, Hexham between Ironbark Creek and No 59 Pacific Highway, Hexham.

7.2 Operation Hours – Ancillary Activities

Operations Management shall only undertake activities ancillary to the operation of the metal shredder, including the operation of all associated plant, equipment and machinery, loading/unloading of materials, materials handling and ingress/egress of heavy vehicles to/from the site, between 7:00am and 10:00pm Monday to Saturday, and at no time on Sunday or Public Holidays

Notwithstanding 9.2.1 Operations Management may seek the DPIE Director-General's approval to alter the hours of operation for ancillary activities specified under the DPIE Consent condition 4.8A. In seeking the Director-General's approval, the Operations Management shall provide the required information as specified in the DPIE Consent Conditions.

8 Transport Conditions

Site transport arrangements are governed by the Hexham Traffic Management Plan (HEX-OPS-PC-SOP-602) and associated Driver Induction Requirements ("Do's and Don'ts") addresses the requirements of Consent Condition 7.5b (Transport Management). General conditions applying to all drivers include:

- Drivers are reminded that the first part of Spark Street is a Public Street and subject to a speed limit of 50 kilometers per hour at all times.
- Drivers are expected to follow NSW road rules and respect the rights of, and be courteous to, other road users.
- Drivers must report all accidents and near miss incidents to the Traffic Controller / Operations Supervisor.

Operations Management shall regularly inspect Sparke Street and the intersection at the Pacific Highway for debris that may be associated with the operation of the Shredder Facility and arrange for its removal from trafficable pavement and road shoulders.

8.1 Purchase of Western End of Sparke St

Condition 7.5(b)(iii)-(iv) of the DPIE consent relates to tracking of mud and traffic control between the shredder yard (previously Lots 29-30 DP803794) and the HM yard (previously Lot 1 DP874409). InfraBuild Recycling purchase this property in 2011 and members of the public are no longer able to access the roadway between the two yards.

9 Noise Conditions

Operations Management shall operate and maintain the development to ensure that noise generated during the operation of the development does not exceed the noise limits specified in Table 1, at those locations and during those periods indicated.

The maximum allowable noise contributions apply under:

- wind speeds up to 3 ms⁻¹ (measured at 10 metres above ground level); and
- temperature inversion conditions up to 3oC per 100 metres.

Table 1 - Operation Noise Limits

Location	Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays	Evening 6:00pm to 10:00pm on any day	Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays	
	LAeq (15 minute)	LAeq(15 minute)	LAeq(15 minute)	LA1(1 minute)
Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55
St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56
Any operating industrial premises affected by noise from the premises	70	70	70	N/A

Note: 5dB(A) shall be added to the measured level should the noise be substantially tonal or impulsive in character.

Operations Management has installed noise-monitoring equipment at the St Joseph's Catholic Care of the Aged facility, in consultation with the owners of that property, and to the satisfaction of the DPIE Director-General.

Operations Management shall operate the noise monitoring equipment on an on-going basis, as may be agreed with the St Joseph's Catholic Care of the Aged facility, to monitor noise impacts from the development on that property.

All noise monitoring data shall be made available to the St Joseph's Catholic Care of the Aged facility.

Operations Management may only cease noise monitoring in accordance with this condition, after having consulted with the St Joseph's Catholic Care of the Aged facility, and only with the agreement of the DPIE Director-General.

For the purpose of assessment of noise impacts specified under condition 4.3 of the DPIE Consent, noise from the development shall be measured within one meter of the boundary of any affected residential or industrial premises.

Existing operational Management procedures and manuals shall be updated to incorporate the new site and any new requirements. Measures shall include:

- Recycling's specific Safety Management Manual and Safety Management Procedures.
- Scrap metals containing dangerous goods shall not be accepted for processing.
- All incoming scrap feed material shall be visually inspected prior to shredding.
- Potentially explosive devices, including gas cylinders, are removed prior to shredding where possible.
- LPG gas bottles shall not be accepted for shredding – except those known to be degassed and vented from authorised suppliers.
- All potentially explosive devices, including gas cylinders, shall be disposed of in an environmentally satisfactory manner.
- The shredder mill water spray system shall be operated whenever scrap car bodies are being shredded.

10 Environmental Monitoring

10.1 Quarterly Noise Monitoring

Operations Management have appointed a consultant to carry out operation noise monitoring and compliance auditing as required by the DPIE Consent – See **Appendix 5** (Noise Management Plan).

10.2 Explosion Overpressure Monitoring

Operations Management has installed at the Eastern most boundary of the site and shall maintain and operate suitable instrumentation, in accordance with Australian Standard 2187.2-1993, to monitor and measure explosion overpressures traveling in a northerly direction towards residences at Shamrock Street and to the satisfaction of the EPA. Records of all blasts recorded shall be maintained.

10.3 St Josephs Continuous Noise Monitor

Operations Management will ensure the continuous noise monitor at St Josephs Retirement Home is operational and maintained.

10.4 Meteorological Monitoring

- Operations Management has installed and shall maintain and operate Suitable instrumentation to monitor (by sampling and obtaining results by analysis) the parameters specified in Table 2.
- Operations Management shall monitor the parameters specified in Table 2 using the specified units of measure, averaging period, frequency, and sampling method in the table.
- Records of all-weather conditions recorded shall be maintained.

Table 2 – Meteorological monitoring

Parameter	Units of Measure	Averaging Period	Frequency	Method
Rainfall	mm	1 Day	Daily	AM-4
Wind Speed @ 10m	m/s	15 minute	Continuous	AM-2 and AM-4
Wind Direction @ 10m	°	15 minute	Continuous	AM-2 and AM-4
Temperature @ 10m	°C	15 minute	Continuous	AM-4
Temperature @ 2m	°C	15 minute	Continuous	AM-4
Sigma Theta @ 10m	°	15 minute	Continuous	AM-4
Additional Requirements <ul style="list-style-type: none"> - Siting - Measurement 				AM-1 & Am-4 AM-2 and AM-4

10.5 Storm Water Quality Monitoring

Operations Management shall ensure the quality of storm water leaving the site by adhering to the Surface Water Mitigation and Monitoring Plan prepared by AECOM and dated 22 December 2020. Appendix 4 summarizes key components of the Storm Water Monitoring Plan including:

- identification of contaminants to be tested;
- monitoring frequencies; and
- location of the storm water quality monitoring.

10.6 Dust Monitoring

Operations Management shall operate and maintain the development in a manner that minimises dust emissions from the site. All activities undertaken on the site shall be carried out in a manner that minimises the generation of dust, and emissions from the site and traffic-generated dust including:

- Hardstand areas shall be regularly washed down to prevent a build-up of fine materials;
- All Vehicle traffic surfaces within the site shall be vacuum cleaned as required;
- All onsite equipment shall be maintained so that they operate efficiently to reduce emissions;

Operations management may undertake due diligence monitoring of dust emissions from time to time to evidence appropriate management of dust on site.

10.7 Stack Emission Monitoring

Operations Management has appointed a consultant to carry out all Shredder Stack Emission sampling as required by the DPIE Consent.

- All air emission stacks shall be fitted with sampling points, which comply with the Clean Air (Plant and Equipment) Regulation 1997 and Australian Standard 4323.1-1995.



- Operations Management shall operate the development to ensure that the concentrations of Total Solid Particles, lead (Pb), and mercury (Hg) discharges from the shredder plant do not exceed the limits specified in Table 3.
- Operations Management shall periodically determine the pollutant concentrations specified in Table 4, as discharged from the shredder plant employing the sampling and analysis method specified and at the frequency indicated in the table. All monitoring shall be carried out strictly in accordance with Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (EPA 2007).

Table 3 – Maximum Allowable Discharge Concentration Limits (Air)

Pollutant	Maximum Allowable Discharge Concentration Limit	Reference Conditions
Lead (Pb)	5.0mg/m ³	dry, 273K, 101.3kPa
Mercury (Hg)	1.0mg/m ³	dry, 273K, 101.3kPa
Total Solid Particles	100/m ³	dry, 273K, 101.3kPa

10.8 Monitoring Records

The results of any monitoring required by EPA Licence 5345 must be recorded and retained as set out in this condition. All records required to be kept by EPA Licence 5345 must be:

- in a legible form, or in a form that can readily be reduced to a legible form;
- kept for at least 4 years after the monitoring or event to which they relate took place; and
- produced in a legible form to any Authorised Officer of the EPA who asks to see them.

The following records must be kept in respect of any samples required to be collected for the purposes of this licence:

- the date(s) on which the sample was taken;
- the time(s) at which the sample was collected;
- the point at which the sample was taken; and the name of the person who collected the sample.

11 Waste Management

- Operations Management shall only store, treat, process or reprocess material as outlined in the EPA Licence 5345.
- Operations Management shall ensure that an EPA Authorised Liquid Waste Disposal Company is appointed to remove all Scheduled Liquid Waste from the premises in accordance with EPA Licence 5345.
- Operations Management shall ensure that all Solid Waste Residue arising from Shredding Operations is dispatched as required to appropriately approved waste disposal facilities – See Appendix 2.
- General putrescible and solid waste generated by employees shall be collected in waste bins then transferred to skips to be collected by a registered contractor;



- Sludge and oils from the First Flush System shall be removed as required by a registered contractor.

12 Dangerous Goods Management

- Operations Management shall ensure that all chemicals, fuels and oils shall be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund.
- Self-bunded containers are used across the location where required to contain possible spills.
- Hydrocarbon spill kits shall be maintained on site to manage spills.
- In the event of a major spills accident a sand bund shall be established, if necessary, upstream of the culvert beneath the Pacific Highway and the Fire Brigade Hazmat Unit and EPA notified;
- Spills occurring on Lots 1 will be captured in the First Flush Pit – If, the spill was to occur after a heavy rainfall event (a 1 in 30-year event) and the First Flush Pit was full – Trained Staff shall block the outlet of the On-Site Detention basin to contain the spill.

13 Community Consultative Committee

- Operations Management has established a Community Consultative Committee for the development to provide a forum for the discussion of the environmental performance of the development, provision of relevant data, and the receipt of community complaints and concerns.
- The Committee shall include, but not necessarily be limited to representatives from the St Joseph's Catholic Care of the Aged facility and the Shortland / Birmingham Gardens / Sandgate Residents' Action Group.
- Operations Management shall ensure that the Committee meets at least monthly during the first six months of operation of the development, after which meeting frequency shall be by agreement between Operations Management and the Committee, and for the approval of the Director-General.
- Records of Minutes from CCC Meetings shall be maintained by Operations Management and copies shall be produced upon request from the DPIE Director-General or NSW EPA Authorised Officer

14 Auditing, Complaints Handling and Notifications

14.1 Internal Environmental Performance Auditing

- Operations Management shall ensure that regular internal audits are carried out by suitably trained and competent Company Personnel to ensure Shredder Plant Operation overall compliance with Legislation, Consent Authority and EPA Licence Conditions.
- Internal Environmental Audits are to identify any observed non-conformance so that corrective actions can be taken and where possible identify opportunities to improve Operation Environmental Performance where appropriate.
- Internal Audit Reports are to be included in the Monthly Environmental Report to Company Executive Management.



14.2 Independent Environmental Auditing

- As may be directed by the Director-General, the Applicant shall commission an independent person or team to undertake an Environmental Audit of the development. The independent person or team shall be approved by the Director-General prior to the commencement of the Audit. The Audit shall:
 - be carried out in accordance with ISO 19011:2002 - Guidelines for Quality and/or Environmental Management Systems Auditing;
 - assess compliance with the requirements of this consent, and other licences and approvals that apply to the development;
 - assess the environmental performance of the development against the predictions made and conclusions drawn in the documents referred to under condition 1.2 of this consent; and
 - review the effectiveness of the environmental management of the development, including any environmental impact mitigation works.
- An Environmental Audit Report shall be submitted to the Director-General within two months of the completion of the Audit, detailing the findings and recommendations of the Audit and including a detailed response from the Applicant to any of the recommendations contained in the Report.

14.3 Notification of Environmental Incidents / Near Miss Events

- In the event of an environmental emergency such as a fuel spill or other emission exceeding regulatory requirements, the employees that caused it, or those closest to the location, will take all reasonable steps to stop, control and contain the pollutant so as to minimise its impact on the environment.
- Operations Management will provide Employees and Contractors/Subcontractors with the Recycling procedure for the internal reporting of Environmental incidents/near misses/serious occurrences. Employees and Contractors/Subcontractors shall use this procedure and forms when notifying Operations Management of Environmental accidents/near misses/serious occurrences and incidents.
- Employees and Contractor/Subcontractor must report any Environmental near miss or serious occurrence to Operations Management or the Environmental Representative, as soon as reasonably practical.
- Employees and Contractor/Subcontractor must supply any information regarding the Environmental incident to Operations Management or the Environmental Representative.
- Operations Management shall report all incidents of harm to the environment to the following authorities:
 - Environment Protection Authority of NSW in accordance with EPA licence conditions
 - The Director-General of DPIE (refer DPIE Consent Conditions 44.3 through to 44.5 - Reporting of Environmental Incidents).

14.4 Recording of Pollution Complaints

Operation Management, throughout the life of the development have made available the following Community Complaint Facilities:

- a 24-hour telephone number (02 4961 9700) on which complaints about the development

may be registered;

- a postal address (PO Box 329 Liverpool, NSW 2170) to which written complaints may be sent; and
- an email address (lesley.harpeng@infrabuild.com) to which electronic complaints may be transmitted.

These details shall also be provided on the Infrabuild internet site. The telephone number, the postal address and the email address shall be maintained throughout the life of the development.

Operations Management must keep a legible record of all complaints made to Management or any employee or agent of the Management in relation to pollution arising from any activity to which EPA Licence 5345 applies.

The record must include details of the following:

- the date and time of the complaint;
- the method by which the complaint was made;
- any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
- the nature of the complaint;
- the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant;
- and if no action was taken by the licensee, the reasons why no action was taken.

The record of a complaint must be kept for at least 4 years after the complaint was made and must be produced to the DPIE Director-General or any Authorised Officer of the NSW EPA who asks to see them.

14.5 Notification of EPA and DPIE of any change to Environmental Representative

NSW EPA will be notified of any change of Environmental Representative within 14 days of the change. The Environmental Representative is listed in the Hexham Emergency Response Plan (HEX-OHSE-RM-TOOL-601). The notification should be marked attention to the Newcastle office of the NSW EPA: waste.operations@epa.nsw.gov.au and the DPIE general email: information@planning.nsw.gov.au. Note that it is not expected that a change to the Environmental Representative does not trigger the requirement for a resubmission of this OEMP to DPIE.

15 Performance Reviews

15.1 Preparation of Annual Environmental Management Report (AEMR)

The requirement to prepare and submit an AEMR is contained in Consent Condition 8.3. The AEMR is due within 3 months of the EPL anniversary, being 18 March of every year. The AEMR should be submitted to DPIE via the Major Projects planning portal website: <https://www.planningportal.nsw.gov.au/major-projects> and a copy sent to Newcastle City Council at: mail@ncc.nsw.gov.au.

15.2 NSW EPA Monthly Waste and Annual Shredder Floc Reports

Operations Management will submit Monthly Waste Reports to the NSW EPA in accordance with

the licence conditions R4.1 and R4.2.



Appendix 1 – GFG Alliance Environmental Policy

GFG Alliance Australia

Environment Policy



GFG Alliance Australia's primary operations include mining, metal recycling, steelmaking, the manufacture of intermediate and finished steel products, and the distribution and sale of metal and mineral products.

We seek to improve business sustainability by valuing environmental, social and economic considerations in our decision-making.

We are committed to pursuing a high standard of environmental management throughout our operations and strive for continual improvement of environmental performance, the efficient use of resources, and the minimisation or prevention of pollution.

Specifically, it is our policy to:

- Establish, review, document and monitor measurable environmental objectives and targets to continually improve environmental performance whilst taking into account evolving community expectations, management practices, scientific knowledge, technology and business structure.
- Use energy, fresh water and other resources more efficiently, including an emphasis on local scrap metal recovery and recycling. Use green, renewable long term sources of power where possible. Promote and improve the environmental credentials of GFG Alliance Australia, our operations, our products and their application.
- Comply with applicable environmental laws, regulations and mandatory standards. Where these do not exist, apply appropriate internal standards that reflect our commitment to prevent or minimise adverse environmental impacts resulting from our operations, products and services.
- Communicate on environmental issues with relevant governments and communities directly affected by our operations, and contribute to the development of policies, legislations and regulations that may affect GFG Alliance Australia operations.
- Control and manage environmental risks arising from our operations by implementing systems to identify, assess, control, and monitor those environmental risks.
- Educate and appropriately train workers and contractors to assist with GFG Alliance Australia's understanding of environmental standards and assignment of appropriate accountabilities and responsibilities to those individuals.
- Inform relevant workers, contractors and suppliers of goods and services to GFG Alliance Australia managed sites of their obligations regarding this policy, to manage policy implementation, facilitate stakeholder understanding and be committed to continual policy maintenance and improvement.

Sanjeev Gupta
Executive Chairman
November 2017

www.gfgalliance.com

Version No: 5 | Issued 1.11.2017 | Authorised by GFG Alliance Australia OHSE Council | Intranet version is the only controlled version

Appendix 2 – Waste Management Plan

Aim

- To minimise any detrimental effect of Shredder Operations Waste on the surrounding Environment
- To monitor generated wastes and review effectiveness of actions and measures utilized to control them

Scope

Applicable to all wastes generated from the operation of the Shredding Facility.

Identification of Wastes

Flock – Non-Metallic Solid Shredder Residue

Flock material usually consists of non-metallic material such as foam, electrical components, plastics, rubber, dirt and residues left after the mechanical shredding of car bodies, steel sheets and miscellaneous items.

The Hexham shredding facility has multiple screening processes, mechanical and electrical to recover most metallic parts from generated flock.

Independent analysis of flock has determined a Solid Waste classification.

Control Measures for Ensuring Compliance

- Flock shall be stored in walled bunkers (open at 1 side) until dispatched by truck to EPA Licensed Landfills.
- Trucks taking Flock from Hexham Shredder shall ensure that the load is suitably covered to prevent spills of Flock en-route.
- Operations Management shall ensure that Flock is only dispatched to suitably EPA Licensed Landfill Operators
- Operations Management in accordance with EPA Licence 5435 shall where practicable, implement appropriate procedures to ensure that all scrap, dust and litter is contained within the designated receive and load out areas.
- Operations Supervision shall monitor the Flock storage area and take appropriate action to ensure that Flock does not migrate to other areas on site – especially during adverse weather conditions such as high wind.
- Operations Supervision shall ensure that Flock storage and removal operations do not generate and cause dust to migrate off site.
- Flock storage and environmental impact shall be included in Internal Environmental Audits conducted by Company WHSE Officers and reviewed by Operations and Executive Management.
- Operations Management shall keep Monthly Flock Generation and Dispatch Statistics and shall review the effectiveness of Flock control measures and improve such measures where appropriate.

Waste Oil / Water, Hydrocarbons / Water Mixtures & Emulsions

Waste oil / water, hydrocarbons / water mixtures and emulsions arise from the de-lousing of un-compacted motor vehicles.

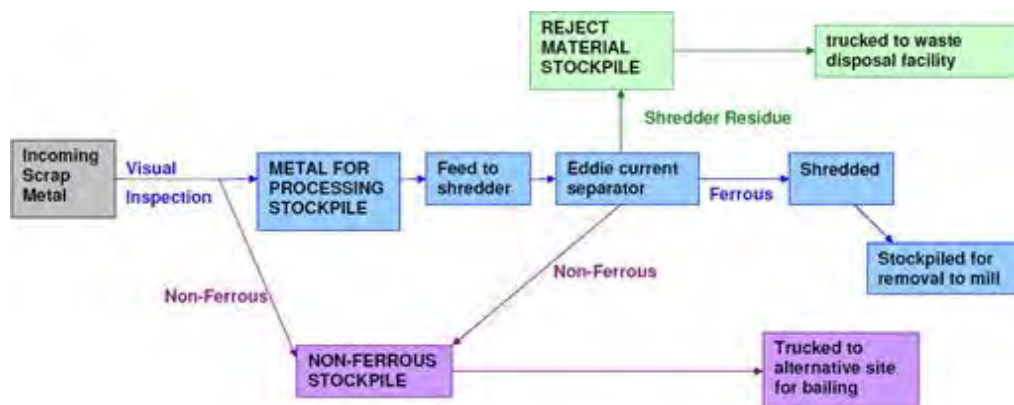
Un-compacted motor vehicles delivered to site usually result from dumped derelict vehicles being recovered from environmentally sensitive areas, Council arranged pickups and the General Public responsibly disposing of such vehicles.

Quantities of this category of waste is difficult to estimate due to the varying conditions of un-compacted cars presented – Statistical analysis of such waste recovered, and dispatched post operation of the Shredding Facility will provide an accurate figure.

Control Measures for Ensuring Compliance

- Operations Management shall ensure that all scrap motor vehicles delivered to the Hexham Shredding Facility from Company controlled sources have been compacted and/or de-loused of fluids.
- Operations Management / Supervision shall review scrap motor vehicle deliveries from Company controlled sources and, should vehicles be found to contain fluids, take appropriate action to ensure future deliveries conform.
- Operations Supervision shall perform inspections of the designated scrap vehicle area and take appropriate action should any evidence of fluid migration from the bunding be detected.
- Operations Supervision shall monitor quantities of motor vehicle fluids stored and shall arrange disposal through an accredited provider of such service.
- Operations Supervision will ensure that levels of stored scrap motor vehicle fluids are kept to minimal levels especially in times of inclement weather or impending flood.

Operations Management shall monitor compliance to the Waste Management Plan and DISCIPLINARY ACTION up to and including cancellation of employment and work contracts will be instigated against Company Personnel or Service Providers found not to be complying with the Waste Management Plan.



Appendix 3 – Landscape Management Plan

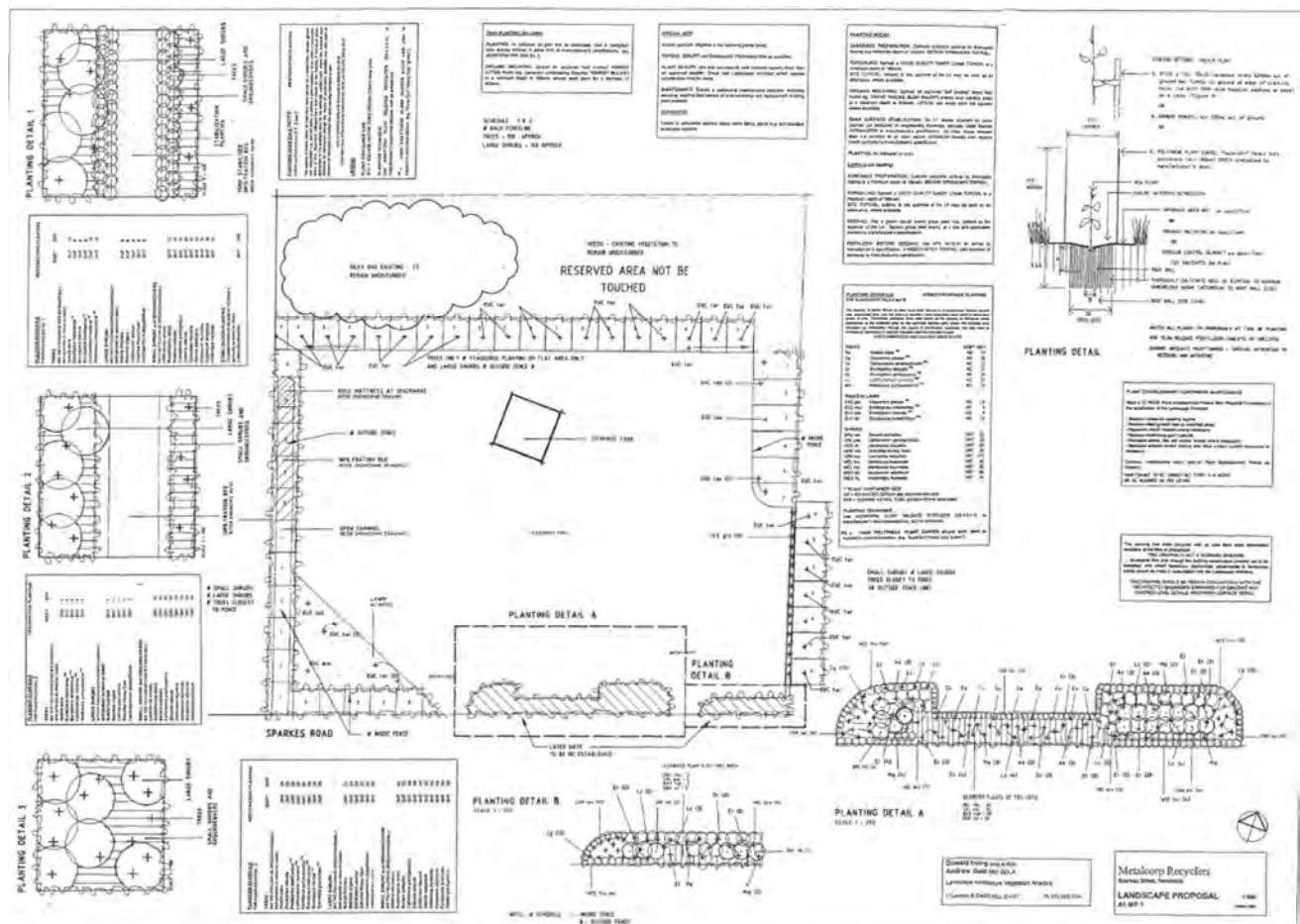
Aim

- To mitigate any adverse effect of the development on the visual amenity of the surrounding area – Specifically the Pacific Highway, Ironbark Creek, residential receptors and the railway line.
- To install and maintain Landscaping for the full life of the development around all boundaries of the development maximizing the use of flora species endemic to the locality and suited to local soil conditions in accordance with the Landscape Plan.
- To maintain and improve where practicable the existing vegetation on all boundaries of the development.

Scope

The Hexham Shredding Facility located Lot 1 DP1176316 - Sparke Street Hexham NSW 2322.

Approved Landscape Plan



Planning for Bushfire Protection

- The Company has assessed the development site regarding attack by bushfire in accordance with Appendix 3 of The Planning for Bushfire Protection (NSW Rural Fire Service and Planning NSW, 2018).
- The development is sited on flat terrain with distances from classified vegetation



indicating a LOW risk Category of Bushfire Attack.

- The Company has trained emergency personnel who are competent in Fire Response to deal with any fire emergency.

Landscape Maintenance Schedule

The Company has commissioned a professional landscaper to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species.

Garden maintenance to be carried out every 4 to 6 weeks or as required maintaining the original standard:

- Maintain adequate watering where required.
- Prune shrubs and trees as required.
- Replace dead or dying plants with Landscape Plan approved species.
- Remove weed growth from mulched areas.
- Roundup unwanted weed growth along fence lines.
- Replenish mulch where necessary
- Keep mulch clear from collar of shrubs.
- Reinstated stakes, ties and polythene plant guards as required
- Repair erosion control where necessary.
- Remove windblown debris from garden areas.

Lawn maintenance to be carried out;

- Fortnightly – September through March, and
- Monthly – April through August, or
- As required maintaining the original standard.
- Mowing all grassed areas.
- Trimming along fence lines.
- Trimming edges on gutters and driveways
- Roundup unwanted weed growth along fence lines
- Remove windblown debris from grassed areas
- Blowing of driveways and gutters.

Riparian Zone – Boundary of Heavy Metal Yard and Ironbark Creek

Established vegetation between the boundary of Lot 1 and Ironbark Creek will not be disturbed.

Pacific Highway

Vegetation along the Pacific Highway will be inspected at 4-to-6-week intervals to ensure that it is effectively managed to maintain 180 metre vehicle sight distances for vehicles exiting Sparke Street onto the Pacific Highway in accordance with RTA requirements.



Appendix 4 – Stormwater Sampling

Surface water sampling is proposed to be completed during every discharge events only on a biannual basis at the following locations:



FIGURE 9: PROPOSED SAMPLING LOCATIONS


AECOM

Analytes

5.2.3 Laboratory analysis

The list of CoPCs has been refined based on reported concentrations as part of the discharge characterisation report. Surface water samples collected during the monitoring program are to be analysed for the following CoPCs and attributes:

- TRH
- BTEX
- PAHs
- Glycols
- Total Suspended Solids (TSS)
- Turbidity;
- pH;
- Electrical Conductivity (EC);
- Oil & Grease
- Ca/K/Mg/Na
- Nutrients (Nitrogen, Phosphorus, Nitrite + Nitrate and Kjeldahl Nitrogen)
- Dissolved and total heavy metals and metalloids (i.e. Aluminium, Arsenic, Boron, Cadmium, Chromium VI, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel).

Appendix 5 – Noise Management Plan

Background

The Recycling site at Hexham NSW ('the Site') has operated in some form since 1994. In 2004 the site underwent a major expansion and upgrade, including the commissioning of a new shredder. The development consent for this was development approval number DA 345-7-2003-i. This DA includes specific requirements for the management of noise, including the creation of a Noise Management Plan. Since 2004 there have been various regulatory, organisational and operational changes and the Noise Management Plan has now been revised in response to those changes. In addition, in 2017 there was a review of the effectiveness of the previous noise monitoring program. The results of this review have also been incorporated into this revised Noise Management Plan.

Aim and Scope

The aim of the Hexham Noise Management Plan is to provide the information and direction needed to ensure operational compliance with the noise related conditions of the development approval for the Site (DA 345-7-2003-i).

DA 345-7-2003-i strictly only applies to the portion of the site on which the shredder is located (the Western side of Sparke St). However, this Noise Management Plan applies to the entire Recycling operation at Hexham, i.e. sites on both sides of Sparke St.

Potential Sources and Controls

Potential Noise Sources	Controls
Normal operations	<ul style="list-style-type: none"> Limits to operating hours Initial selection of equipment that is compliant Equipment maintenance to avoid increasing operational noise Noise monitoring program for early warning of exceedances
Overpressure events (i.e. explosions within the shredder)	<ul style="list-style-type: none"> Limits to operating hours Strict controls to prevent prohibited items (e.g. gas cylinders) from entering the scrap stream Refer to Site Acceptance Criteria for more information
Traffic noise	<ul style="list-style-type: none"> Limits on the number, time and route of truck movements Refer to Traffic Management Plan for more information

Noise Monitoring Program

Noise monitoring has been undertaken at the site since 2004. In 2017 there was a review of the monitoring process and the results of that process. This review showed that the site consistently complied with the applicable noise limits, although there were opportunities for rationalization and improvement in the noise monitoring program. The 2017 version of the noise monitoring program has been developed in response to the findings of the 2017 review.

A key finding in the review was that there had been a gradual but significant increase in background noise levels since the commencement of the program. As a result, it was often not possible to determine if the site was compliant or not when noise was recorded close to the receptors. In response the noise monitoring consultants adopted an alternative methodology in which they measured noise on the site boundary and then used established industry techniques to model a predicted noise level at the receptors. This method is acceptable under the NSW Industrial Noise Policy (2000). This approach has now been permanently adopted within the noise monitoring program.

Noise Monitoring Limits and Locations

The applicable noise limits, as recorded at specific receptor locations, are provided in the table below. This information is taken directly from DA 345-7-2003-i and EPA Licence 5345.

Applicable noise limits

Location	Day dB(A) LAeq (15 min)	Evening dB(A) LAeq (15 min)	Night dB(A) LAeq (15 min)
Shamrock St	47	48	45
Calvary St (St Joseph's Retirement Village)	53	42	41
Operating industrial premises	70	70	70

Noise Monitoring Frequency and Methodology

- The noise monitoring program is a routine ongoing operational activity and should be planned for as such
- It is conducted by an external professional organisation qualified to undertake such activity
- Monitoring events occur 4 times a year (Every Quarter)
- Monitoring consists of attended monitoring on the site boundary at location(s) which allow for the calculation of predicted noise levels at the receptors nominated in the table above, namely Shamrock Street and Calvary Street
- The measured boundary results are used to calculate predicted levels at receptors using established industry methods
- A report is produced for each monitoring round (i.e. Four reports per year)
- The methodology used is described in the report of each round of measurement
- The report for each monitoring round is reviewed internally as soon as it is available



- In the event that a noise exceedance is recorded this will be immediately investigated and addressed
- The applicable noise limits for monitoring and reporting are those contained within DA 345-7-2003-i and also EPA Licence 5345. The limits in both of these documents are the same
- The combined annual results of noise monitoring are provided to DPIE on an annual basis in the form of an Annual Environmental Management Report



Appendix D

Independent
Environmental Audit
(AQIS 2020)

Independent Environmental Audit:
Infrabuild Hexham Recycling Facility
Development Approval DA345-7-2003-i



Assessment of Infrabuild Recycling - Hexham
Against the DA345-7-2003-i Conditions of Consent

Audit Reference:	AQ1293
Audit Organisation:	Infrabuild Recycling, Hexham
Auditors:	James Hart, Lead Auditor, AQUAS
Date of Audit:	19 November 2020
Draft Report Submitted:	14 December 2020
Final Report Submitted:	17 December 2020

Amendment, Distribution & Authorisation Record

Version Control and Distribution

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Final	17/12/2020	Final for Issue	Gregor Riese, Paul Smith

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This report has been prepared and reviewed in accordance with our Quality control system.

This report has been prepared by:

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Environmental Auditor

Date: 17/12/2020

Reviewed by:

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Lead Environmental Auditor

Date: 7/12/2020

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1. Executive Summary

This audit was completed to assess the compliance of Infrabuild Recycling with the requirements of Development Approval 345-7-2003-i Condition 5.12. The audit was conducted by AQUAS (James Hart – Lead Auditor) on 19 November 2020.

Overall, the project environmental performance in relation to the Development Approval 345-7-2003-i is satisfactorily met with the following key strengths noted:

- Programs have been developed and implemented for maintenance of plant and equipment;
- Internal and external communication with the community and stakeholders continue to be undertaken;
- Non-conformances raised have been recorded, communicated and corrective actions implemented;
- Environmental controls on site have been implemented, including:
 - erosion and sedimentation i.e. drain/pits covered;
 - dust and vibration monitoring devices were installed around the site and reports have been received periodically;
 - controls had been developed for management of truck movements;
 - noise monitoring had been conducted to assess operational impacts on identified sensitive receivers;
 - waste segregation is in place; and
 - dust controls had been installed and implemented.

Summary of Audit Findings

Based on the conducted independent environmental audit which comprised of document and records review, interview with key personnel and site inspection there were a total 97 Conditions of Consent that have been reviewed during this audit.

The following are the audit findings raised that need to be addressed by Infrabuild Recycling to attain full compliance with Development Approval 345-7-2003-i and continually improve the environmental performance of the development.

Non-Compliant

There are 9 non-compliances raised during this audit, however, some of them were immediately closed out after the audit:

- NC-01 Condition 1.2, 2.5 - Non-compliances have been identified as a result of the current Independent Environmental Audit.
- NC-02 – Condition 4.3 – Quarterly noise monitoring conducted for the project reported exceedances of site-specific noise criteria in Quarter 2 of 2020.
- NC-03 - Condition 4.8E - Continuous noise monitoring has not been conducted at St Joseph's Catholic Care of the Aged facility.
- NC-04 - Condition 4.46 – Chemical containers had not always been stored in bunded areas.
- NC-05 - Condition 7.1 and EPL M6.4 – Evidence that the EPA and DPIE had been formally advised of the change to the environmental representative was not available.
- NC-06 - Condition 7.4 – The Operational Environmental Management Plan (OEMP) did not address all requirements of consent condition 7.4.
- NC-07 – Condition 7.5 - Subplans required under the OEMP do not include all information as required by Condition 7.5.
- NC-08 – Condition 8.3 - No evidence was sighted to demonstrate that the Annual Environmental Management Report was submitted to Council every year.
- NC-09 – EPL 6.2 - The Infrabuild website lists the contact number for the site - 02 4961 9700 which is the Hexham reception and operates during business hours. However, this number is not clearly identified as the complaints line.

2. Introduction

2.1 Background

InfraBuild Recycling (InfraBuild) operates a metal recycling facility at Hexham, Newcastle, which specialises in the safe handling, collection and processing of ferrous and non-ferrous scrap metal.

In 2003, an application was submitted to the NSW Department of Planning and Infrastructure (now NSW Department of Planning, Industry and Environment - DPIE) for the construction and operation of a metal recycling facility. Approval was granted under Part 1, Schedule 3 of the Environmental Planning and Assessment Regulation 2000 on 2 February 2004 (S03/00986). Five modifications to the project approval have been approved, the latest being 17 May 2005.

The Conditions of Approval require Infrabuild to appoint an independent auditor to assess compliance with the Minister's Conditions of Approval obtained for the metal recycling operations.

Condition 5.12 of the approval requires:

Within two years of the commencement of construction of the development, and then as may be directed by the Director-General, the Applicant shall commission an independent person or team to undertake an Environmental Audit of the development. The independent person or team shall be approved by the Director-General prior to the commencement of the Audit. The Audit shall:

- a. be carried out in accordance with ISO 19011:2002 - Guidelines for Quality and/or Environmental Management Systems Auditing;
- b. assess compliance with the requirements of this consent, and other licences and approvals that apply to the development
- c. assess the environmental performance of the development against the predictions made and conclusions drawn in the documents referred to under condition 1.2 of this consent; and
- d. review the effectiveness of the environmental management of the development, including any environmental impact mitigation works.

An Environmental Audit Report shall be submitted to the Director-General within two months of the completion of the Audit, detailing the findings and recommendations of the Audit and including a detailed response from the Applicant to any of the recommendations contained in the Report.

2.2 Project Details

Project Name	Infrabuild Recycling Hexham
Project Application Number	345-7-2003-i
Project Address	14 Sparke Street, Hexham NSW
Project Phase	Operation
Project Activity Summary	Metal Recycling.

2.3 Audit Team

Details of the AQUAS environmental auditors for this audit were submitted to the Department of Planning, Industry and Environment (DPIE). Endorsement by DPI&E of the following auditors was granted prior to the conduct of the audit Refer to **Appendix A**:

Name	Company	Certification
James Hart	AQUAS	Exemplar Global Principal Environmental Auditor – Certificate No. 12105

2.4 Audit Objectives

The objective of this Independent Environmental Audit was to assess the operations at the Hexham Recycling Facility and provide a report in accordance with the requirements of Condition 5.12 of the development approval.

2.5 Audit Scope

The scope of this audit was limited to the recycling facility located at 14 Sparke St, Hexham, and the activities and processes carried out by Infrabuild in operating the facility. The audit is the third for the project and covered the period since the previous IEA site inspection on 19 December 2016 and was undertaken with consideration of the Independent Audit – Post Approval Requirements (DPIE 2020).

The scope of the audit is as follows:

- Consultation with agencies and community representatives to obtain feedback and identify any key issues;
- Site inspection of current activities to assess on-site compliance with conditions and commitments;
- Review of records to assess compliance with the:
 - DPIE Conditions of approval;
 - Environmental Protection Licence No 5345;
 - Operational Environmental Management Plan;
 - Air Quality Management Plan;
 - Noise Management Plan;
 - Traffic Management Plan;
 - Acid Sulphate Management Plan;
 - Stormwater Management Plan;
 - Waste Management Plan;
- Organisational units, activities and processes relating to the development that are referred to in the relevant regulatory approval.

2.6 Audit Period

This was the third independent environmental audit carried out for the development which covers the review of environmental documentation and records for the operations since the previous site inspection conducted on 19 December 2016.

It should be noted that this report is based on the result of sampling and supplied documentation/records, as well as site activities on the day of audit (19 November 2020) and submission of evidence within the Infrabuild's Response dated 8 December 2020.

3. Audit Methodology

3.1 Approval of Auditors

Letter from the Planning Secretary agreeing to the auditors is attached as **Appendix B**.

3.2 Audit scope development

AQUAS developed the audit scope and a checklist based on the Development Approval 345-7-2003-i Requirements. Refer to **Appendix E** of this report.

3.3 Audit Process

3.3.1 Opening Meeting

The audit commenced with an Opening Meeting to confirm the scope, purpose, and timeline of the audit. The Opening Meeting was held at 09.00am on 19 November 2020 with Infrabuild representatives and the AQUAS auditor as per the Audit Attendance Sheet. Refer to **Appendix C** of this report.

Key items were discussed, including:

- Confirmation of the purpose and scope of the audit;
- Overview of the operations and status of the works;
- Occurrence of any environmental incidents; and
- Overview of the audit process.

3.3.2 Conduct of Audit

Audit activities included the following:

- Reviewed the project documentation (OEMP and its sub-plans) to verify compliance with the Development Approval Conditions 345-7-2003-i;
- Conducted a site walk to review implementation of mitigation measures and environmental controls;
- Conducted the audit following the checklist that was prepared based on the Development Approval Conditions by interviewing personnel and review of records provided as evidence of compliance; and
- Any identified findings were discussed during closing meeting and any actions noted during site inspection were clearly communicated to the site personnel.

3.3.3 Closing Meeting

The closing meeting was held on 19 November 2020 at 4:30pm with representatives of Infrabuild and AQUAS. General feedback and the findings of the audit were discussed during the closing meeting.

AQUAS auditors acknowledged the cooperation, openness and hospitality of Infrabuild staff during the conduct of this audit.

3.4 Interviewed Persons

Name and position of persons interviewed:

Name	Organisation	Position
Gregor Riese	Project Support	Liberty GFG (Infrabuild parent company)
Paul Smith	Site Manager	Infrabuild Recycling
Jamie Vanderlay	Maintenance Planner	Infrabuild Recycling

3.5 Details of Site Inspection

A site walk around was conducted with focus on the following controls:

- Erosion and sedimentation controls including sediment fences and controls around pits.
- Traffic management and surroundings dust/mud tracking;
- Stabilised access/egress;
- Dust, noise, vibration and waste management;
- Site fence/screening;
- Chemical storage;
- Site signage; and
- General housekeeping.

Photos taken during site inspection are included in the **Appendix F**.

3.6 Consultation

DPIE were consulted and requested that the EPA be consulted to obtain their input into the scope of the audit. Comments provided by the EPA are provided in the table below.

Contact	Agency	Comments
Joel Curran Senior Compliance Officer Compliance Department of Planning, Industry and Environment	Department of Planning, Industry and Environment	Based on previous IEA and site inspections, I would like to see a focus on an assessment of the adequacy and potential improvements for: <ul style="list-style-type: none"> • Dust management – hardstand areas and crusher facility; • Sediment tracking; and • Surface water management.
Karen Gallagher Acting Senior Compliance Officer Regulatory & Compliance Support Unit	NSW Environment Protection Authority	Refer to EPA licence, in particular pollution studies required and processes for air quality and surface water management

Refer to **Appendix F** for consultation records.

3.7 Audit Compliance Status Descriptors

The following audit criteria were used for the rating of audit findings.

Status	Description
Compliant	The auditor has collected sufficient verifiable evidence to demonstrate that all elements of the requirement have been complied with within the scope of the audit.
Non-Compliant	The auditor has determined that one or more specific elements of the conditions or requirements have not been complied with within the scope of the audit.
Not Triggered	A requirement has an activation or timing trigger that has not been met at the time when the audit is undertaken, therefore an assessment of compliance is not relevant.

4. Document Review

The following documents were reviewed and/or sighted as part of this audit:

- Consolidated Conditions of Consent Mod-49-3-2005-i-approved 17 May 2005;
- Recycling Environmental Awareness Training, V2.1, 11/02/2015.
- Introduction to Recycling Environment Management System, 9/11/2014.
- OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017
- Annual Environmental Management Report 2017;
- Annual Environmental Management Report 2018;
- Annual Environmental Management Report 2019;
- InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 1 2020;
- InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 2 2020;
- InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 3 2020;
- Hexham Traffic Management Plan (HEX-OPS-PC-SOP-602);
- Hexham Driver/Contractor Induction Procedure;
- Quarterly Emissions Testing Reports – AECOM;
- Air Quality Impact Assessment - Smorgon Steel Recycling Hexham NSW 2322, 24 November 2005;
- Email correspondence from Murray Cameron 15/09/2005;
- Complaints Register 2017;
- Complaints Register 2018;
- Complaints Register 2019;
- Complaints Register 2020;
- Operation Environmental Management Plan V3, 21/11/2019;
- Letter from DPIE 12/08/2019 - Liberty Recycling Hexham (DA 345-7-2003-i) 2018 Annual Environmental Management Report;
- Letter from DPIE 22/01/2020 - Infrabuild Recycling Hexham (DA 345-7-2003-i) Revised 2018 Annual Environmental Management Report;
- Pollution Incident Response Management Plan, V1 10/08/2020;
- On-site Sewer Permit Issued by Newcastle City Council 2014-2017;
- Civcon Service Maintenance Report Onsite Sewer System, 10/09/2020;
- 2017 Independent Audit Action Plan, updated 23 November 2020;
- Letter to EPA 2/08/2019 - Dust Complaint;
- Letter to EPA 14/06/2019 – Smoke Complaint;
- Stormwater Quality Monitoring Program Metal Shredding Facility, Sparke Street Hexham 23 November 2004;
- Environmental Protection Licence No 5345, 27 May 2020;
- Surface Water Sampling Plan Liberty Recycling Facility - AECOM, Draft 9 August 2019;
- Water Balance Model InfraBuild Recycling Facility - AECOM, 9 September 2019;
- Discharge Characterisation Report, AECOM 27 March 2020;
- Discharge Impact Assessment, AECOM 3 April 2020;
- Surface Water Mitigation and Monitoring Plan, AECOM 29 April 2020;
- Detailed Design Shredder and NF Pit, Ecosol, 17/05/2018;

5. Audit Findings

5.1 Assessment of Compliance

The audit determined that Infrabuild has generally implemented environmental controls to manage the environmental impacts of its operations. The comparison of audit requirements against the compliance ratings is as follows:

DA Requirements	Requirements	Findings
Part 1 – General	6	Compliant – 2
		Non-Compliant – 1
		Not Triggered – 3
Part 2 – Compliance	5	Compliant – 3
		Non-Compliant – 1
		Not Triggered – 1
Part 3 – Construction and Part 4A Certification	2	Compliant – 0
		Non-Compliant – 0
		Not Triggered – 2
Part 4 – Environmental Performance	59	Compliant – 30
		Non-Compliant – 3
		Not Triggered – 26
Part 5 – Environmental Monitoring and Auditing	12	Compliant – 9
		Non-Compliant – 0
		Not Triggered – 3
Part 6 – Community Information	4	Compliant – 3
		Non-Compliant – 1
		Not Triggered – 0
Part 7 – Environmental Management	5	Compliant – 0
		Non-Compliant – 3
		Not Triggered – 2

Part 8 – Environmental Monitoring	4	Compliant – 1
		Non-Compliant – 2
		Not Triggered – 1
Total DA Requirements Reviewed during this audit (97)	Compliant	48
	Non-Compliant	11
	Not Triggered	38

Note: Part 4 includes 4.8 A-E and 4.15A

5.2 Notices, Incidents and Complaints

On 23 June 2020, EPA conducted a site inspection which identified issues related to water discharge and dust emissions. A show cause notice was issued on 14 August 2020 which was responded to on 4 September. Further information was provided by Infrabuild to the EPA on 6 October 2020. EPA issued a Penalty Notice Advice on 30 November 2020.

NSWEPA, had issued 5 variations to the EPL since the previous independent environmental audit. Licence variation 1573877 was issued which required the completion of a Pollution Study and Dust Mitigation Study, and added conditions requiring Surface Water Characterisation study, a Soil and Ground Water Assessment and a Dust Mitigation Study. Five variations were issues which provided extensions of time for the submissions of studies required. Licence variation 1600771 was issued which provided a licence variation with the addition of reporting conditions R1 to R4.

A Complaints Register is available where information about the complaints were recorded. Records for 2017 to November 2020 were reviewed. Four complaints had been received in 2019. Responses to all complaints had been recorded in the register and implemented where applicable.

5.3 Previous Audit Recommendations

This is the third independent environmental audit conducted. Audit findings from the previous audit conducted by Coffey in December 2016 were reviewed. Appendix A – Previous Audit Recommendations includes actions identified and implemented by Infrabuild to address the previous audit recommendations and status.

5.4 Audit Site Inspection

The site inspection was conducted at 1:00pm on 19 November 2020. AQUAS auditors and Infrabuild representatives walked through the site, where environmental controls were observed, including:

- Stormwater controls;
- Site facilities;
- Waste storage;
- Weather station;
- Chemical storage;
- Site access/egress;
- Dust controls;
- Housekeeping.

Issues raised during the site inspection were addressed immediately during the day of this audit. Please refer to photos of the site inspection in **Appendix F**.

5.5 Suitability of Plans and the EMS

Although the OEMP, including sub-plans had been prepared and approved for the operations, review of the documentation found areas where the OEMP and subplans did not meet all requirements of the development approval. A non-compliance was raised in relation to conformance of the OEMP and subplans to the requirements of the development approval. It is recommended that the OEMP and subplans be reviewed and updated to ensure compliance with conditions of consent. The updated OEMP should be submitted to DPIE for review and approval.

5.6 Development Past Performance

This is the third audit conducted on the project. Actions had been identified and implemented to address findings from previous audits. Monitoring records show that the operations were generally conducted in accordance with the requirements of the development approval and Environmental Protection Licence.

Stack emission monitoring has been conducted on a quarterly basis. Results of monitoring show that emissions are consistently less than the maximum allowable discharge concentration limits. Infrabuild may consider seeking a review of EPL licence requirements to reduce the frequency of stack emission monitoring undertaken.

Noise monitoring has been conducted in accordance with the requirements of the conditions of consent and the EPL. While general conformance with noise limits has been reported, it is noted that high ambient noise levels has resulted in noise levels at the identified receivers being higher than the noise limits identified in the conditions of consent and EPL. To determine the impact of noise generated by operations on the identified receivers, noise monitoring has been conducted at the site boundary and extrapolated to calculate noise levels. Calculated results show noise limits were generally complied with conditions of consent and EPL requirements. Given the difficulty in determine noise impacts from the operations at the identified receivers due to high background noise levels, Infrabuild may consider seeking an amendment to noise monitoring requirements to require noise monitoring at the boundary.

Two non-compliance were raised in relation to noise monitoring. Noise monitoring results for Quarter 2 in 2020 returned and exceedance of noise criteria at one location during the day period. In addition, consent condition 4.8E requires continuous monitoring to be conducted at the St Joseph's Catholic Care of the Aged facility. However, monitoring has been conducted on a quarterly basis (as required by the EPL).

The NSW Environmental Protection Authority (EPA) issued Infrabuild with a Notice of Variation to their existing EPL on 28/03/2019, which prescribed Pollution Studies and Reduction Programs to be undertaken for surface water, soil and groundwater, and dust mitigation.

Studies required for surface water characterisation have been developed, including a Water Balance Model, Discharge Characterisation Report and Discharge Impact Assessment, Surface Water Sampling Plan, and Surface Water Mitigation and Monitoring plan. Documentation had been provided to the EPA and updated to address comments. Improvements identified in the investigations were being implemented, including the implementation of a quarterly water monitoring program.

A Preliminary Site Investigation was undertaken by AECOM and report submitted to the EPA (Dated 22/08/2019). A Detailed Site Investigation was conducted by Kleinfelder (20/07/2020) and provided to the EPA for comment.

A Dust Mitigation Study was conducted by AECOM and the report submitted to EPA for review, with comments provided by EPA. Subsequently, a Revised Dust Mitigation Report was provided to the EPA on 30/01/2020. Further revision was required with the updated report provided on 24/04/2020. A number of controls identified in the dust mitigation study had been implemented, and it was noted

that dust monitoring results show a decreasing trend in dust levels.

5.7 Actual and Predicted Impacts

There are no significant change or additional impacts noted as a result of the operations based on the monitoring results.

5.8 Key Strengths

Overall, the project environmental performance in compliance with Development Approval is satisfactorily met with the following key strengths noted:

- Programs have been developed and implemented for maintenance of plant and equipment;
- Internal and external communication with the community and stakeholders continue to be undertaken;
- Non-conformances raised have been recorded, communicated and corrective actions implemented;
- Environmental controls on site have been implemented, including:
 - erosion and sedimentation i.e. drain/pits covered;
 - dust and vibration monitoring devices were installed around the site and reports have been received periodically;
 - controls had been developed for management of truck movements;
 - noise monitoring had been conducted to assess operational impact on identified sensitive receivers;
 - waste segregation in place; and
 - dust controls had been installed and implemented.

6. Findings and Recommendations

The following table outlines the identified non-compliances that need to be addressed and the auditor's recommendations. Refer to the attached **Appendix D** for full details of findings including auditor notes.

Issue No.	Condition	Requirement	Issue sighted	Recommendation
NC-01	1.2, 2.5	<p>The Applicant shall carry out the development generally in accordance with:</p> <ul style="list-style-type: none"> a) Development Application No. 345-7-2003-i, lodged with the Department of Infrastructure, Planning and Natural Resources on 25 July 2003, as amended by: <ul style="list-style-type: none"> i) MOD-32-3-2004-i, in relation to modification of the consent to require the construction of an acoustic barrier, the conditional restriction of activities and deliveries at the site and a requirement to establish a Community Consultative Committee; ii) MOD-37-3-2004-i, in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to enable the staged commencement of construction works; iii) MOD-45-4-2004-i in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to enable the commencement of construction works, and to provide for an alternative U-Turn facility; iv) MOD-111-11-2004-i, in relation to modification of the development consent with respect to altering the timing for the completion of roadworks; v) MOD-49-3-2005-i, in relation to modification of the consent with respect to removing the requirement to provide an 	Non-compliances have been identified as a result of the current Independent Environmental Audit.	Infrabuild should ensure that appropriate processes are developed and implemented to ensure compliance with the requirements of the conditions of consent.

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		acoustic barrier at St Joseph's Catholic Care for the Aged facility; b) Metal Shredding Facility at Hexham – Environmental Impact Statement (Volumes 1, 2 and 3), prepared by SMEC Australia Ltd and dated July 2003;		
NC-01	2.5	The Applicant shall meet the requirements of the Director-General in respect of the implementation of any measure necessary to ensure compliance with the conditions of this consent, and general consistency with the documents listed under condition 1.2 of this consent. The Director-General may direct that such a measure be implemented in response to the information contained within any report, plan, correspondence or other document submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.	Non-compliances have been identified as a result of the current Independent Environmental Audit.	Infrabuild should ensure that appropriate processes are developed and implemented to ensure compliance with the requirements of the conditions of consent.
NC-02	4.3	Operation Noise ¹ The Applicant shall design, construct, operate and maintain the development to ensure that noise generated during the operation of the development does not exceed the noise limits specified in Table 2, at those locations and during those periods indicated. The maximum allowable noise contributions apply under: a) wind speeds up to 3 ms-1 (measured at 10 metres above ground level); and b) temperature inversion conditions up to 3oC per 100 metres. Table 1 - Operation Noise Limits	Quarterly noise monitoring conducted for the project reported exceedances of site-specific noise criteria in Quarter 2 of 2020.	It is recommended that Infrabuild review noise monitoring data to determine the cause of the exceedances identified to determine if the exceedances are the result of onsite activities. Where the cause of the exceedances is determined to be on site activities, these activities should be modified to reduce the noise impact and surrounding receivers.

¹ Incorporates an EPA General Term of Approval (L6.1, L6.2 and L6.3)

Issue No.	Condition	Requirement				Issue sighted	Recommendation																									
		<table><tr><th>Location</th><th>Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays</th><th>Evening 6:00pm to 10:00pm on any day</th><th colspan="2">Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays</th></tr><tr><td></td><th>LAeq (15 minute)</th><th>LAeq (15 minute)</th><th>LAeq (15 minute)</th><th>LA1 (1 minute)</th></tr><tr><td>Any residence in Shamrock Street, Hexham, affected by noise from the premises</td><td>47</td><td>48</td><td>45</td><td>55</td></tr><tr><td>St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises</td><td>53</td><td>42</td><td>41</td><td>56</td></tr><tr><td>Any operating industrial premises affected by noise from the premises</td><td>70</td><td>70</td><td>70</td><td>N/A</td></tr></table>				Location	Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays	Evening 6:00pm to 10:00pm on any day	Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays			LAeq (15 minute)	LAeq (15 minute)	LAeq (15 minute)	LA1 (1 minute)	Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55	St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56	Any operating industrial premises affected by noise from the premises	70	70	70	N/A		
Location	Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays	Evening 6:00pm to 10:00pm on any day	Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays																													
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St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56																												
Any operating industrial premises affected by noise from the premises	70	70	70	N/A																												
NC-03	4.8E	The Applicant shall install noise monitoring equipment at the St Joseph's Catholic Care of the Aged facility, in consultation with the owners of that property, and to the satisfaction of the Director-General. The Applicant shall operate the noise monitoring equipment on an on-going basis , as may be agreed with the St Joseph's Catholic Care of the Aged facility, to monitor noise impacts from the development on that property. All monitoring data shall be made available to the St Joseph's Catholic Care of the Aged facility. The Applicant may only cease noise monitoring in accordance with this condition, after having consulted with the St Joseph's Catholic Care of the Aged facility, and only with the agreement of the Director-General.				Noise monitoring equipment has not been installed at St Joseph's Catholic Care of the Aged facility to monitor noise on an on-going basis. Quarterly monitoring conducted by AECOM. No record was available to show that changes to the requirement for continuous noise monitoring had been approved by DPIE.	It is recommended that Infrabuild undertake an investigation to determine if the current monitoring program has been approved by DPIE. If no approval has been provided, then Infrabuild should implement noise monitoring in compliance with Condition 4.8E or seek agreement from St Joseph's Catholic Care of the Aged facility, and the Director-General for a modification the requirement for continuous noise monitoring.																									
NC-04	4.46	All chemicals, fuels and oils shall be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. Bunds shall be designed and installed in accordance the requirements of the EPA's <i>Environmental Protection Manual Technical Bulletin Bunding and Spill Management</i> .				During the site inspection, it was found that chemical containers had not always been stored in bunded areas.	All chemicals containers should be stored in bunded areas which comply with the requirements of the EPA's Environmental Protection Manual Technical Bulletin Bunding and Spill Management.																									
NC-05	7.1	Prior to the commencement of construction of the development, the Applicant shall nominate a suitably qualified and experienced Environmental Representative(s). The Applicant shall employ the Environmental				New site manager who is the environmental representative.	Infrabuild should formally notify DPIE and the EPA of changes to the appointment of the environmental																									

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		<p>Representative(s) on a full-time basis during the construction, commissioning and operation of the development. The Environmental Representative shall be:</p> <ul style="list-style-type: none"> a. the primary contact point in relation to the environmental performance of the development; b. responsible for all Management Plans and Monitoring Programs required under this consent; c. responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development; d. responsible for receiving and responding to complaints in accordance with condition 0 and condition 0 of this consent; and e. given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur. <p>The Applicant shall notify the Director-General of the name and contact details of the Environmental Representative upon appointment, and any changes to that appointment that may occur from time to time.</p>	<p>Evidence that the EPA and DPIE had been formally advised of the change to the ER was not available.</p>	<p>representative, including provision of their name and contact details.</p>

Issue No.	Condition	Requirement	Issue sighted	Recommendation
NC-06	7.4	<p>The Applicant shall prepare and implement an Operation Environmental Management Plan to detail an environmental management framework, practices and procedures to be followed during the operation of the development. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the development, including all consents, licences, approvals and consultations; ii. a description of the roles and responsibilities for all relevant employees involved in the operation of the development; iii. overall environmental policies and principles to be applied to the operation of the development; iv. standards and performance measures to be applied to the development, and a means by which environmental performance can be periodically reviewed and improved, where appropriate; v. management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent; vi. the Management Plans listed under condition 0 of this consent; and vii. arrangements for community consultation and complaints handling procedures during construction. <p>The Plan shall be submitted for the approval of the Director-General no later than one month prior to the commencement</p>	<p>The following deficiencies were identified in the OEMP:</p> <ul style="list-style-type: none"> • Does not identify all statutory and other obligations required to be fulfilled. • Responsibilities provided for Operations management, operations employees. Responsibilities have not been clearly assigned to individual roles. • Site roles have not been clearly identified. 	<p>The OEMP should be updated to address the deficiencies identified and submitted to DPIE for approval.</p>

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		of operation of the development, or within such period otherwise agreed by the Director-General. Any stage of the operations shall not be commissioned until the Director-General has approved the OEMP covering the works undertaken in that stage. Upon receipt of the Director-General's approval, the Applicant shall supply a copy of the Plan to Council as soon as practicable.		
NC-07	7.5	<p>As part of the Operation Environmental Management Plan for the development, required under condition 0 of this consent, the Applicant shall prepare and implement the following Management Plans:</p> <p>a. a Noise Management Plan to outline measures to manage noise impacts associated with the operation of the development. The Plan shall include, but not necessarily be limited to:</p> <p>I. identification of the potential sources of noise during the site operations;</p> <p>II. specification of the noise criteria for these operations;</p> <p>III. a detailed description of what actions and measures would be implemented to ensure that operations would comply with specified noise criteria. This shall include measures to minimise night-time emissions and stringent screening procedures to minimise the potential for overpressure events at the site; and</p> <p>IV. a description of how the effectiveness of actions and measures would be monitored over time; and if any non-compliance is detected what procedures would be followed to ensure compliance;</p>	<p>Subplans required under the OEMP do not included all information as required by Condition 7.5.</p> <p>Appendix 3 – Transport Management Plan</p> <ul style="list-style-type: none"> • Does not include a Transport Code of Conduct • Does not include possibilities for reducing daily heavy vehicle movements during night-time periods or during morning peak periods. • Does not include procedures to limit the tracking of mud/dirt on the roadway <p>Appendix 8 - Flood Emergency Management Plan</p> <ul style="list-style-type: none"> • details of the workforce education awareness program implemented at the site; • identification of the designated evacuation routes and flood refuges 	Subplans required under the OEMP should be updated to ensure that they address all the requirements of Consent Condition 7.5.

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		<p>b. a Transport Management Plan to outline measures to ensure minimal amenity impacts on the locality through the appropriate management of heavy vehicles accessing and departing the development. The Plan shall be prepared in consultation with Council and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> I. details of the Transport Code of Conduct for the development that outlines the management of traffic impacts associated with heavy vehicles accessing and departing the site; II. consideration of all possibilities for reducing the required daily heavy vehicle movements and movements during peak or night-time periods; III. procedures to ensure the safe and efficient movement of vehicles between Lots 29-30 DP803794 and Lot 1 DP874409; IV. procedures to limit the tracking of mud/dirt on the roadway between Lots 29-30 DP803794 and Lot 1 DP874409; V. procedures for monitoring the effectiveness and suitability of these measures; and VI. details of additional measures that would be implemented should be non-compliance be detected. <p>c. a Flood Emergency Management Plan to outline measures that would be implemented in a time of flood. The Plan shall provide detailed evacuation procedures to interface with the Bureau of Meteorology's flood warning system and the local State Emergency Services</p>	<p>Appendix 6 – Stormwater Management Plan</p> <ul style="list-style-type: none"> • details of all relevant stormwater control infrastructure • procedures for the installation and maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek; • a demonstration of consistency with the stormwater management plan for the catchment and any relevant stormwater guidelines prepared by Council; • details of the monitoring program, as required by condition 5.11, to monitor stormwater flows from the site; and <p>Appendix 5 – Landscape Management Plan;</p> <ul style="list-style-type: none"> • details of existing and proposed landscaping to be undertaken on the site with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, 	

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		<p>plan (where appropriate) and to include provisions for any third parties likely to be involved. The Plan shall also include, but not necessarily be limited to:</p> <ol style="list-style-type: none"> I. a detailed description of the likely flood behaviour of the area within the vicinity of the site; II. identification of the flood warning systems that would be utilised by the proposed operations; III. details of the workforce education awareness program implemented at the site; IV. details of the evacuation and evasion procedures that would be undertaken in a time of an emergency; V. identification of the designated evacuation routes and flood refuges; and VI. details of flood preparedness and awareness procedures for residents and visitors to the site. <p>d. a Stormwater Management Plan to outline measures to mitigate impacts of stormwater run-off from and within the premises. This plan shall address the requirements of Council and shall include, but not necessarily be limited to:</p> <ol style="list-style-type: none"> I. details of all relevant stormwater control infrastructure; II. procedures for the installation and maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek; 	<p>residential receptors and the railway line;</p> <ul style="list-style-type: none"> • details of landscape works to improve the condition of the riparian zone along the boundary of Lot 1 DP 874409 and Ironbark Creek; • maximisation of flora species endemic to the locality in landscaping the site; • measures to ensure general consistency with the relevant guidance provided in Planning for Bushfire Protection (NSW Rural Fire Service and Planning NSW, 2001); • a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species; and • a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle sight distances in accordance with RTA requirements <p>Appendix 4 – Waste Management Plan</p> <ul style="list-style-type: none"> • a description of what procedures would be 	

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		<p>III. a demonstration of consistency with the stormwater management plan for the catchment and any relevant stormwater guidelines prepared by Council;</p> <p>IV. details of the monitoring program, as required by condition 0, to monitor stormwater flows from the site; and</p> <p>V. details of any contingency measures that would be followed to ensure the protection of neighbouring waterways and wetlands should an accident or emergency occur at the site.</p> <p>e. a Landscape Management Plan to outline measures to ensure appropriate development and maintenance of landscaping on the site. The Plan shall address the requirements of Council and shall include, but not necessarily be limited to:</p> <p>I. details of existing and proposed landscaping to be undertaken on the site with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, residential receptors and the railway line;</p> <p>II. details of landscape work to improve the condition of the riparian zone along the boundary of Lot 1 DP 874409 and Ironbark Creek;</p> <p>III. maximisation of flora species endemic to the locality in landscaping the site;</p> <p>IV. measures to ensure general consistency with the relevant guidance provided in <i>Planning for Bushfire</i></p>	<p>followed to ensure compliance if any non-compliance is detected.</p>	

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		<p><i>Protection</i> (NSW Rural Fire Service and Planning NSW, 2001);</p> <p>V. a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species; and</p> <p>VI. a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle sight distances in accordance with RTA requirements.</p> <p>f. a Waste Management Plan to outline measures to minimise the production and impact of wastes generated at the development. The Plan shall include, but not necessarily be limited to:</p> <p>I. identification of the types and quantities of waste that would be generated during operations, and the standards and performance measures for dealing with this waste;</p> <p>II. ²a description of appropriate procedures that will be implemented to ensure that all scrap, dust and litter is contained within the designated receival and load out areas;</p> <p>III. a detailed description of how this waste would be reused, recycled, and if necessary, appropriately treated and disposed of in accordance with the EPA's guidelines on the <i>Assessment, Classification & Management of Liquid and Non-Liquid Waste</i>;</p>		

² Incorporates an EPA General Term of Approval (E1.3)

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		<p>IV. a description of how the effectiveness of these actions and measures would be monitored over time; and</p> <p>a description of what procedures would be followed to ensure compliance if any non-compliance is detected.</p>		
NC-08	8.3	<p>The Applicant shall, throughout the life of the development, prepare and submit for the approval of the Director-General, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the development against the Operation Environmental Management Plan (refer to condition 0 of this consent), the conditions of this consent and other licences and approvals relating to the development. The AEMR shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a. details of compliance with the conditions of this consent; b. a comparison of the environmental impacts and performance of the development against the environmental impacts and performance predicted in those documents listed under condition 0 of this consent; c. details of any complaints received in relation to the operation, an overview of how these complaints were handled, and the results of any actions taken by the Applicant to address the complaint; d. results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person; and 	No evidence was sighted to demonstrate that the Annual Environmental Management Report was submitted to Council every year.	A copy of the Annual Environmental Management Report should be provided to Council in accordance with the requirements of Consent condition 8.3. Records of submission of the Annual Environmental Management Report to DPIE and Council should be maintained.

Issue No.	Condition	Requirement	Issue sighted	Recommendation
		<p>e. a list of all occasions in the preceding twelve-month period when environmental performance goals for the development have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident.</p> <p>f. The Applicant shall submit a copy of the AEMR to the Director-General and Council every year, with the first AEMR to be submitted no later than twelve months after the commencement of operation.</p>		
NC-09	EPL M6.4	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	The InfraBuild website lists the contact number for the site - 02 4961 9700 which is the Hexham reception and operates during business hours. However, this number is not clearly identified as the complaints line	The complaints line should be clearly identified and communicated to the public. Consider updating the website to clearly identify that the telephone number provided is the complaints line.
NC-10	EPL M6.4	<p>The licensee must nominate to the EPA a representative of the company that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their telephone number, must be current at all times. The nomination and contact details must be provided to the EPA's Regional Manager- Hunter at PO Box 488G, Newcastle NSW 2300.</p> <p>Note: This condition does not apply until two (2) weeks after the date of issue of the variation notice to include this condition.</p>	Where there was a change to the nominated representative, records were not available to show that the name and contact details of the new representative had been provided to the EPA.	Records should be maintained to verify that, when there is a change to the nominated representative, the names and contact details of new representative are provided to the EPA.

Appendix A. Previous Audit Findings

CoA Ref	NC No.	Corrective Action	Details of corrective action	Target Date	Completion Date	Status	Actions Achieved
1.1	NC01	Implement all practicable measures to prevent or minimise harm to the environment	At the completion of all CAs on this list all practicable measures will have been implemented	22-Oct-17	DSI Submitted 20 July 2020	Closed	During 2019-2020 the business submitted the following reports to the NSW EPA Licence 5345 Section 8 Pollution Studies & Reduction Programs: - Dust Study - AECOM Dust Mitigation Report Oct 2019; IBR Dust Mitigation Report Jan 2020 - Stormwater Studies - AECOM Sampling Plan Aug 2019; Water Balance Model Sept 2019; Discharge Characterisation March 2020; Ecotox Assessment April 2020; Mitigation Report Apr 2020 - Detailed Site Investigation (Soil and Groundwater): Kleinfelder DSI July 2020. All practical recommendations contained in these reports have been implemented by the business.
1.2	NC02	Implement all documentation requirements	At the completion of all CAs on this list all documented requirements will have been implemented	22-Oct-17	Revised OEMP Submitted to DPIE 21 Nov 2019	Closed	The site OEMP was revised in late 2019 to capture these outstanding requirements (refer NC09; NC10; NC11).
2.1	NC03	Review site inductions to ensure consent requirements are included.	Incorporate relevant consent conditions in the site induction. The site induction is a requirement to be completed by all new employees, contractors and sub-contractors performing work on the site.	22-Aug-17	20-Sep-17	Closed	Personal who interact with the Infrabuild Recycling Hexham location are made aware through various methods of the Environmental requirements for the site. For example, new employees are trained in Environmental awareness, Contractors via the Work Safety Permit.
2.5	NC04	Implement all requirements of the Director General	At the completion of all CAs on this list all requirements of the Director-General will have been implemented	22-Oct-17	20-Jul-20	Closed	At the completion of all CAs on this list all requirements of the Director-General will have been implemented. The Hexham DSI was submitted to NSW in July 2020 closing off NC01.
4.3	NC05	A. Create a system to reduce the likelihood of inadvertently	Formalise triggers such as the safety calendar and prompts from the contractors to ensure quarterly monitoring is completed	31-Aug-17	20-Sep-17	Closed	The appointed contractor used to conduct testing has a program to remind the Hexham facility in relation to when such testing is required. The site also captures this via their own site maintenance program

CoA Ref	NC No.	Corrective Action	Details of corrective action	Target Date	Completion Date	Status	Actions Achieved
		missing quarterly noise monitoring					
4.3	NC05	B. Determine the need for a repeat background noise survey	Obtain expert advice on the utility of obtaining such a survey. If it is recommended complete this survey by an assigned due date	31-Aug-17	23-Oct-17	Closed	As per the Noise Management Plan it was agreed with an environmental consultation and management within Infrabuild that a repeat background noise survey would not be required, and the plan now captures the use of boundary measurement algorithm
4.3	NC05	C. Review and revise the noise monitoring program	Review and revise the program with a focus on analysis of historical results, the effect of changes to background levels, the need for change to monitoring methodology, the revised monitoring plan	31-Aug-17	23-Oct-17	Closed	It was agreed with an environmental consultation and management within Infrabuild that a repeat background noise survey would not be required, and the plan now captures the use of boundary measurement algorithm
5.3	NC06	This is the same as NC05 A, B & C above	This is the same as NC05 A, B & C above				
5.11	NC07	A. Review water monitoring history and establish meaningful assessment criteria	Review all historical water monitoring results Determine likely impact of site operations Assess the receiving environment against appropriate guidelines Determine appropriate criteria	30-Sep-17	Monitoring report submitted 29 Apr 2020	Closed	Due to amendments to the EPA Licence 5345, new requirements for the Infrabuild Hexham location is to conduct Surface Water Characterisation program which covers off on a Water Balance model, Water Characterisation, Discharge Characterisation, Discharge Impact Assessment & a Surface Water Mitigation & Monitoring Plan. The new monitoring programme is defined in the AECOM Surface Water Mitigation & Monitoring Plan submitted to NSW EPA on 29 April 2020. The report specifies contaminants to be tested; monitoring frequencies; methodologies for stormwater quality monitoring.
5.11	NC07	B. Revise and implement the Stormwater Management Plan	Revise and implement the Stormwater Management Plan: - Incorporate the criteria based on the history of local results (i.e. taking into account background results) - Decide on appropriateness of local rainfall as the trigger	30-Sep-17	Monitoring report submitted 29 Apr 2020	Closed	The Surface Water Mitigation & Monitoring Plan submitted to NSW EPA meets these requirements.

CoA Ref	NC No.	Corrective Action	Details of corrective action	Target Date	Completion Date	Status	Actions Achieved
			- Formalise the upstream (background) monitoring location				
7.1	NC08	Revise Roles and Responsibilities Matrix with regard to Environmental Representative.	Revise the Responsibilities Matrix and incorporate into a revised Operations Environmental Management Plan (OEMP)	15-Aug-17	31-Jan-20	Closed	This is no longer a separate matrix and has been incorporated into the EMP for the location
7.4	NC09	Review and Update site OEMP and then update induction documents	Update the OEMP and include revised suite of Management Plans as outlined in NC10-15. Changes will then be implemented via updated site induction.	19-Nov-17	21-Nov-19	Closed	The Operational Environmental Management Plan has now been updated and includes the suite of management plans as appendices. Note: The OEMP will need to be updated once the stormwater study has been completed
7.5a	NC10	Review and Update the site Noise Management Plan	Update the Noise Management plan Incorporating findings from NC05 above.	30-Sep-17	21-Nov-19	Closed	The Noise Management Plan has been updated and attached to the OEMP, included in the plan is the items identified from NC05.
7.5b	NC11	Review and Update the site Traffic Management Plan	Update the Traffic Management plan and include latest material from site training documents relating to transport and load restraint.	31-Aug-17	21-Nov-19	Closed	The Traffic Management Plan has been updated and attached to the OEMP. The site holds an independent Traffic Management plan which all employees are trained in and covers Transport as well as load restraint requirements which is Safety focused. The OEMP continues to capture the requirements as a part of the Development Consent and is shared with key contractor transport companies for them to communicate to drivers on the requirements when entering & exiting Sparke Street
7.5c	NC12	Review and Update the site Flood Emergency Management Plan	Flood Emergency Management plan to Include learnings from Jan 2016 1 in 100yr flood event.	22-Aug-17	21-Nov-19	Closed	The Flood Emergency plan has been updated and attached to the OEMP. Learnings from the 2016 Flood at the Hexham facility have not prompted a change to the Flood Management Plan but other areas were identified as maintenance activities now captured within the site's maintenance program. These being the internal inspection of pipes leading from the Shredder First Flush Pit to the Swale discharge point and the pipe from Sparke Street to Ironbark Creek discharge point.

CoA Ref	NC No.	Corrective Action	Details of corrective action	Target Date	Completion Date	Status	Actions Achieved
7.5d	NC13	Review and Update the site Stormwater Management Plan	Update the stormwater Management plan Incorporating findings from NC07 above.	08-Oct-17	Monitoring report submitted 29 Apr 2020	Closed	The Surface Water Mitigation & Monitoring Plan submitted to NSW EPA meets these requirements.
7.5e	NC14	Review and Update the site Landscape Management Plan	Update the Landscape Management plan with focus on noxious weed identification and removal practices.	20-Sep-17	21-Nov-19	Closed	The Landscape Management plan has been updated and attached to the OEMP. The plan covers as a part of the maintenance of landscaping for the site that landscaping will be in a tidy, healthy state and free of weed species
7.5f	NC15	Review and Update the site Waste Management Plan	Update the Waste Management plan. Include a waste stream generation/flow diagram	30-Sep-17	21-Nov-19	Closed	The Waste Management Plan has been updated and attached to the OEMP. Included in the Waste Management Plan is a waste stream diagram as highlighted from the Audit.
-	-	Additional Dust & Sediment control actions as per correspondence to the Department 9th of January 2019	-	09-Jan-19	09-Oct-19	Closed	As part of the EPA Licence 5345 Pollution Studies & Reduction Programs, Infrabuild Recycling Hexham was required to complete a Dust Mitigation Study and Report. This has been completed and submitted for approval to the EPA. The Sediment part of the program is being captured in the Water Characterisation program which is not due for completion until April 2020.

Appendix B. Auditors Approval



Planning,
Industry &
Environment

Gregor Riese
Project Support
Infrabuild Recycling
124 Viking Drive
WACOL QLD, 4076

29/10/2020

Dear Mr Riese

**Infrabuild Recycling Hexham (DA 345-7-2003-i)
Independent Environmental Audit 2020 – auditor endorsement request**

Reference is made to your request (DA345-7-2003-I-PA-2) for the Secretary's approval of suitably qualified persons to undertake the Independent Environmental Audit (IEA) 2020 for the Infrabuild Recycling Hexham, metal recycling facility, as required by Schedule 2, Condition 5.12 of DA345-7-2003-i as modified (the consent) and submitted to the Department of Planning, Industry and Environment (the Department) on 28 October 2020.

In accordance with Schedule 2, Condition 5.12 of the consent the Secretary has agreed to the following audit team:

- Mr James Hart (lead auditor).

Please ensure this correspondence is appended to the IEA report.

The Independent Audit must be prepared, undertaken and finalised in accordance with the conditions of consent. Further, the Department requests, under Schedule 2, Condition 2.5 of the consent, that the auditor considers the recently released *Independent Audit – Post Approval Requirements* (Department 2020), available on the Department's website, including the use of compliance descriptors "compliant", "non-compliant" or "not triggered" only (<https://www.planning.nsw.gov.au/-/media/Files/DPE/Other/Assess-and-regulate/About-Compliance/independent-audit-post-approval-requirements-2020-05-19.pdf>). Failure to meet these requirements will require revision and resubmission.

In accordance with Schedule 2, Condition 5.12 of the consent, the IEA report is to be submitted to the Department within two months of the completion of the audit, including a detailed response from the Applicant to any of the recommendations contained in the report.

Note that the audit period is to be from the date of the last IEA site inspection (19 December 2016) to the date of the 2020 IEA site inspection.

If you wish to discuss the matter further, please contact Joel Curran, Senior Compliance Officer on (02) 4904 2702 or compliance@planning.nsw.gov.au

Yours sincerely



Heidi Watters
Team Leader Northern
Compliance

As nominee of the Planning Secretary

Appendix C. Audit Attendance Sheet

Appendix D. Independent Audit Declaration Form

Independent Audit Declaration Form

Declaration of Independence - Auditor

Project Name: Metal Shredding Facility
 Consent Number: Project Approval Integrated DA No. 345-7-2003-I
 Description of Project: Metal Recycling
 Project Address: Lots 29-31 DP803794 and Lot 1 DP874409, 107 Sparke Street, Hexham
 Proponent: Onesteel Recycling Pty Limited
 Date: 13 of October 2020

I declare that:

- i. I am not related to any proponent, owner, operator or other entity involved in the delivery of the project. Such a relationship includes that of employer/employee, a business partnership, sharing a common employer, a contractual arrangement outside an Independent Audit, or that of a spouse, partner, sibling, parent, or child;
- ii. I do not have any pecuniary interest in the project, proponent or related entities. Such an interest includes where there is a reasonable likelihood or expectation of financial gain (other than being reimbursed for performing the audit) or loss to the auditor, or their spouse, partner, sibling, parent, or child;
- iii. I have not provided services (not including independent reviews or auditing) to the project with the result that the audit work performed by themselves or their company, except as otherwise declared to the Department prior to the audit;
- iv. I am not an Environmental Representative for the project; and
- v. I will not accept any inducement, commission, gift or any other benefit from auditee organisations, their employees or any interested party, or knowingly allow colleagues to do so.

Notes:

- a) Under section 10.6 of the *Environmental Planning and Assessment Act 1979* a person must not include false or misleading information (or provide information for inclusion in) in a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is false or misleading in a material respect. The proponent of an approved project must not fail to include information in (or provide information for inclusion in) a report of monitoring data or an audit report produced to the Minister in connection with an audit if the person knows that the information is materially relevant to the monitoring or audit. The maximum penalty is, in the case of a corporation, \$1 million and for an individual, \$250,000; and
- b) The *Crimes Act 1900* contains other offences relating to false and misleading information: section 307B (giving false or misleading information – maximum penalty 2 years imprisonment or 200 penalty units, or both).

Name of Proposed Auditor: James Hart

Signature: 

Qualification: Lead Environmental Auditor – Exemplar Global Certificate No. 12105

Company: AQUAS Pty Ltd

Appendix E. Audit Checklist and Audit Findings

Audit Checklist – DA 345-7-2003-i -MOD-49-3-2005-i

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
SCHEDULE 2						
GENERAL						
Obligation to Minimise Harm to the Environment						
1.	1.1	The Applicant shall implement all practicable measures to prevent or minimise any harm to the environment that may result from the construction, operation and where relevant, the decommissioning of the development.		No harm to the environment has resulted from the operation of the development during the period covered by the current audit.	Compliant	
Scope of Development						
2.	1.2	<p>The Applicant shall carry out the development generally in accordance with:</p> <p>a. Development Application No. 345-7-2003-i, lodged with the Department of Infrastructure, Planning and Natural Resources on 25 July 2003, as amended by:</p> <p>i) MOD-32-3-2004-i, in relation to modification of the consent to require the construction of an acoustic barrier, the conditional restriction of activities and deliveries at the site and a requirement to establish a Community Consultative Committee;</p> <p>ii) MOD-37-3-2004-i, in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to</p>		<p>Non-compliances have been identified as a result of the current IEA.</p> <p>Recommendation:</p> <p>Infrabuild should ensure that appropriate processes are developed and implemented to ensure compliance with the requirements of the conditions of consent.</p>	Non-Compliant	01

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>enable the staged commencement of construction works;</p> <p>iii) MOD-45-4-2004-i in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to enable the commencement of construction works, and to provide for an alternative U-Turn facility;</p> <p>iv) MOD-111-11-2004-i, in relation to modification of the development consent with respect to altering the timing for the completion of roadworks;</p> <p>v) MOD-49-3-2005-i, in relation to modification of the consent with respect to removing the requirement to provide an acoustic barrier at St Joseph's Catholic Care for the Aged facility;</p> <p>b. Metal Shredding Facility at Hexham – Environmental Impact Statement (Volumes 1, 2 and 3), prepared by SMEC Australia Ltd and dated July 2003;</p> <p>c. Proposed Metal Recycling Facility, Sparke Street, Hexham – Response to DIPNR fax dated 2 October 2003, prepared by SMEC Australia Pty Ltd and dated 23 October 2003;</p> <p>d. Traffic Analysis, Intersection of Pacific Highway and Sparke Street, Hexham, prepared by Terra Consulting Australia Pty Ltd and dated 26 November 2003;</p> <p>e. Correspondence titled Re: Existing – V – Predicted Noise Levels from Peter Karantonis of Renzo Tonin and Associates Pty Ltd to Jim Clarence of the EPA and dated 24 September 2003;</p>				

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<ul style="list-style-type: none"> f. Revised plans accompanying the DA, numbered 0321-03-04A and 0321-03-02; g. correspondence titled Metalcorp Recyclers DA 345-7-2003-i – Shredder development of Lots 29 & 30 Sparke Street Hexham, from Smorgon Steel Recycling to the Department, dated 16 March 2004; h. correspondence titled Metalcorp Recyclers proposed development of Lots 29 & 30 Sparke Street, Hexham, DA 345-7-2003-i Section 96 Modification application (with addendum) from Smorgon Steel to the Department, dated 23 April 2004; i. correspondence titled Metalcorp Recyclers Pty Ltd – Applicant for modification of consent DA 345-7-2003-i: Lots 29 & 30 Sparke Street, Hexham (with attachments) from Smorgon Steel to the Department, dated 15 March 2005; j. the conditions of this consent. 				
3.	1.3	<p>In the event of an inconsistency between:</p> <ul style="list-style-type: none"> a. the conditions of this consent and any document listed from condition 0a) to 0i inclusive, the conditions of this consent shall prevail to the extent of the inconsistency; and b. any document listed from condition 0a) to 0i inclusive, and any other document listed from condition 0a) to 0i inclusive, the most recent document shall prevail to the extent of the inconsistency. 		No inconsistencies have been identified.	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
4.	1.4	The Applicant shall not concurrently operate the shredder the subject of this development consent, with the existing shredder located and operating on the site (as in existence at the time of granting this consent).	Annual Environmental Management Report 2019	An Independent Environmental Audit was conducted in 2007 by HLA Envirosciences which stated that the shredders did not operate concurrently.	Not triggered	
Statutory Requirements						
5.	1.5	<p>The Applicant shall ensure that all licences, permits and approvals are obtained and kept up to date as required throughout the life of the development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals.</p> <p>Note: A Part 3A permit under the <i>Rivers and Foreshores Improvement Act 1948</i> must be obtained from the Department (Hunter Region) prior to the commencement of the proposed intersection works on the Pacific Highway and the proposed drainage channel construction works on Lot 1 DP874409.</p>		<p>Applicable licences and permits had been obtained. E.g.:</p> <p>EPL 5345</p> <p>Approval for Onsite Wastewater treatment system.</p> <p>Dangerous goods licence for storage of flammable gas (Liquid oxygen).</p>	Compliant	
Dispute Resolution						
6.	1.6	In the event that a dispute arises between the Applicant and Council or the Applicant and a public authority other than the Department, in relation to a specification or requirement applicable under this consent, the matter shall be referred by either party to the Director-General, or if not resolved, to the Minister, whose determination of the dispute shall be final and binding on all parties. For the purpose of this condition, "public authority" has the same meaning as provided under section 4 of the Act.		Reported that no disputes have arisen	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		Note: Section 121 of the <i>Environmental Planning and Assessment Act 1979</i> provides mechanisms for resolution of disputes between the Department, the Director-General, Councils and public authorities.				
COMPLIANCE						
7.	2.1	The Applicant shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.	Recycling Environmental Awareness Training, V2.1, 11/02/2015. Introduction to Recycling Environment Management System, 9/11/2014. Training Matrix	Site environmental awareness training required every 2 years. Includes aspects, impacts and controls associated with recycling activities.	Compliant	
8.	2.2	The Applicant shall be responsible for environmental impacts resulting from the actions of all persons on the site, including contractors, subcontractors and visitors.		Infrabuild are aware of their environmental responsibilities relating to the site.	Compliant	
9.	2.3	Prior to each of the events listed from a) to b) below, or within such period otherwise agreed by the Director-General, the Applicant shall certify in writing to the satisfaction of the Director-General that it has complied with all conditions of this consent applicable prior to that event. Where an event is to be undertaken in stages, the Applicant may, subject to the agreement of the Director-General, stage the submission of compliance certification consistent with the staging of activities relating to that event. commencement of construction of the development; and commencement of operation of the development;	Annual Environmental Management Report 2019 – Appendix B OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Previously verified	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
10.	2.4	Notwithstanding condition 2.3 of this consent, the Director-General may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Director-General and be submitted within such period as the Director-General may agree.		IEA required to be conducted by December 2020. No other reports on compliance have been required.	Compliant	
11.	2.5	The Applicant shall meet the requirements of the Director-General in respect of the implementation of any measure necessary to ensure compliance with the conditions of this consent, and general consistency with the documents listed under condition 1.2 of this consent. The Director-General may direct that such a measure be implemented in response to the information contained within any report, plan, correspondence or other document submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.		Non-compliances have been identified as a result of the current IEA, which triggers a non-compliance with this condition of consent. Recommendation: Infrabuild should ensure that appropriate processes are developed and implemented to ensure compliance with the requirements of the conditions of consent.	Non-Compliant	01
CONSTRUCTION AND PART 4A CERTIFICATION						
12.	3.1	In relation to the construction and occupation of the development, the Applicant shall provide to the Director-General and Council the following: a. written notification of the appointment of a Principal Certifying Authority; b. copies of all Construction Certificates issued for the development; c. written notification of the intention to commence construction work, to be received at least two working days prior to the commencement of	Annual Environmental Management Report 2019 – Appendix B OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Previously verified	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>construction. In the event that more than one Construction Certificate is issued, notification shall be provided prior to the commencement of construction the subject of each Certificate;</p> <p>d. copies of all Occupation Certificates issued for the development; and</p> <p>e. written notification of the intention to occupy the development, to be received at least two working days prior to occupation. In the event that more than one Occupation Certificate is issued, notification shall be provided prior to the occupation the subject of each Certificate;</p>				
13.	3.2	<p>Prior to the commencement of any construction activities associated with the development, the Applicant shall erect at least one sign at the construction site and in a prominent position at the site boundary where the sign can be viewed from the nearest public place. The sign(s) shall indicate:</p> <p>a. the name, address and telephone number of the Principal Certifying Authority;</p> <p>b. the name of the person in charge of the construction site and telephone number at which that person may be contacted outside working hours; and</p> <p>c. a statement that unauthorised entry to the construction site is prohibited.</p> <p>d. The sign(s) shall be maintained for the duration of construction works, and shall be removed as soon as practicable after the conclusion of the construction works.</p>		<p>Construction completed.</p> <p>Project is in operational phase.</p>	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #								
ENVIRONMENTAL PERFORMANCE														
Noise Impacts														
14.	4.1	<p>Construction Noise</p> <p>The Applicant shall ensure that all construction activities associated with the development do not exceed the criteria at the nominated locations specified in Table 1.</p> <p>Table 1 – Construction Noise Criteria</p> <table><tr><th>Locations</th><th>Day</th></tr><tr><td></td><th>L_{Aeq}(15 minute) (dB(A))</th></tr><tr><td>Shamrock Street (Hexham) residences</td><td>47</td></tr><tr><td>St. Joseph's Retirement Village (Hexham)</td><td>53</td></tr></table>	Locations	Day		L _{Aeq} (15 minute) (dB(A))	Shamrock Street (Hexham) residences	47	St. Joseph's Retirement Village (Hexham)	53		No construction work during the period covered by this audit.	Not Triggered	
Locations	Day													
	L _{Aeq} (15 minute) (dB(A))													
Shamrock Street (Hexham) residences	47													
St. Joseph's Retirement Village (Hexham)	53													
15.	4.2	<p>Construction activities associated with the development shall only be conducted between 7:00 am and 6:00 pm from Monday to Friday inclusive, and from 8:00 am to 1:00 pm on Saturdays. No construction activity is permitted on a Sunday or a public holiday.</p> <p>Note: This condition does not apply in the event of a direction from police or other relevant authority for safety reasons, or to avoid the loss of life, property or damage to the environment.</p>		No construction work during the period covered by this audit.	Not Triggered									
16.	4.3	<p>Operation Noise</p> <p>³The Applicant shall design, construct, operate and maintain the development to ensure that noise generated during the operation of the development does not exceed the noise limits specified in Table 2, at those locations and</p>	Annual Environmental Management Report 2017 Annual Environmental	Quarterly monitoring was performed by AECOM in quarters 1,2,3 and 4 of each year. 2017- Compliant	Non-Compliant	02								

³ Incorporates an EPA General Term of Approval (L6.1, L6.2 and L6.3)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #																								
		<p>during those periods indicated. The maximum allowable noise contributions apply under:</p> <p>a. wind speeds up to 3 ms-1 (measured at 10 metres above ground level); and</p> <p>b. temperature inversion conditions up to 3oC per 100 metres.</p> <p>Table 2 - Operation Noise Limits</p> <table><tr><th rowspan="2">Location</th><th>Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays</th><th>Evening 6:00pm to 10:00pm on any day</th><th colspan="2">Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays</th></tr><tr><th>L_{Aeq} (15 minute)</th><th>L_{Aeq} (15 minute)</th><th>L_{Aeq} (15 minute)</th><th>L_{A1} (1 minute)</th></tr><tr><td>Any residence in Shamrock Street, Hexham, affected by noise from the premises</td><td>47</td><td>48</td><td>45</td><td>55</td></tr><tr><td>St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises</td><td>53</td><td>42</td><td>41</td><td>56</td></tr><tr><td>Any operating industrial premises affected by noise from the premises</td><td>70</td><td>70</td><td>70</td><td>N/A</td></tr></table>	Location	Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays	Evening 6:00pm to 10:00pm on any day	Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays		L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)	Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55	St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56	Any operating industrial premises affected by noise from the premises	70	70	70	N/A	<p>Management Report 2018</p> <p>Annual Environmental Management Report 2019</p> <p>InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 1 2020</p> <p>InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 2 2020</p> <p>InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 3 2020</p>	<p>2018 – Compliant</p> <p>2019 – Two non-compliances recorded (Q3 and Q4). Noise levels calculated from boundary monitoring (to exclude ambient noise impacts) were below noise limits.</p> <p>2020 Q1- Compliant</p> <p>2020 Q2 – Day Noise levels not compliant.</p> <p>Evening and night measured noise levels were below criteria.</p> <p>2020 – Q3 – Day noise level at R1 above criteria. Evening and night noise levels above operational noise limits.</p> <p>Site boundary monitoring conducted – predicted noise levels from InfraBuild facility were below operational noise limits.</p> <p>It was noted that ambient noise levels were above the noise limits specified at the majority of the receptors.</p> <p>To assess the sites, impact on the identified receptors, noise monitoring was also conducted at the site boundary from which the noise level from the sites operations at the receivers was calculated. Calculations determined that</p>		
Location	Day 7:00am to 6:00pm Monday to Saturday 8:00am to 6:00pm Sundays and Public Holidays	Evening 6:00pm to 10:00pm on any day		Night 10:00pm to 7:00am Monday to Saturday 10:00pm to 8:00am Sundays and Public Holidays																										
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)																										
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Any operating industrial premises affected by noise from the premises	70	70	70	N/A																										

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
				<p>noise levels from the site's operations were below the operation noise limits.</p> <p>Recommendation:</p> <p>It is recommended that Infrabuild review noise monitoring data to determine the cause of the exceedances identified to determine if the exceedances are the result of on-site activities. Where the cause of the exceedances is determined to be on site activities, these activities should be modified to reduce the noise impact and surrounding receivers.</p>		
17.	4.4	⁴ For the purpose of assessment of noise impacts specified under condition Error! Reference source not found. of this consent, noise from the development shall be measured within one metre of the boundary of any affected residential or industrial premises.	InfraBuild Recycling Hexham Quarterly Noise Monitoring Reports	<p>Noise monitoring was conducted at both defined receiver locations and at the site boundary.</p> <p>Due to the difficulty in determining the contribution of the facility at the nominated receiver locations, an alternative method of determining compliance, site boundary measurements, was also conducted to predict noise impacts at each receiver location.</p>	Compliant	
18.	4.5	Operating Hours	Shredder running sheet	<p>The shredder was reported to operate 7.00am to 3.00pm daily.</p> <p>The shredder may operate up to 6.00pm during periods of high demand.</p>	Compliant	

⁴ Incorporates an EPA General Term of Approval (L6.1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		⁵ The Applicant shall only operate the metal shredder between 7:00am and 6:00pm Monday to Saturday, and at no time on Sunday or Public Holidays.				
19.	4.6	⁶ Notwithstanding condition 0, the Applicant may operate the metal shredder between the hours of 6:00pm and 10:00pm, Monday to Friday, where the following requirements are complied with: <ul style="list-style-type: none"> a. an unplanned and unforeseeable situation arises at the premise by which the operation of the NSW remelt steel industry is at risk of being negatively impacted by a shortage of shredded scrap; b. the Director-General, EPA and noise receptors within 1.5km radius of the metal shredder are informed, in writing, at least 24 hours prior to commencing outside the permitted hours of operation; and c. that an officer appointed by the Applicant will be on site at all times during the extended hours of operation, solely for the purpose of ensuring compliance with noise limits at various locations. d. Note: For the purposes of the above condition, 'all noise receptors within a 1.5km radius of the metal shredder' is limited to: <ul style="list-style-type: none"> e. <i>the noticeboards of St Joseph's Retirement Village, Hexham.</i> f. <i>the residences on Old Maitland Road, west of St. Joseph's Retirement Village</i> 		The shredder has not been operated between the hours of 6.00pm and 10.00pm	Compliant	

⁵ Incorporates an EPA General Term of Approval (L7.1)

⁶ Incorporates an EPA General Term of Approval (L7.1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		g. the residences on Pacific Highway and intersecting streets between Ironbark Creek and No.59 Pacific Highway, Hexham.				
20.	4.7	<p>⁷The Applicant may seek approval from the EPA to extend the hours of operation for the metal shredder, as specified in condition 0, incrementally to 10:00pm Monday to Friday. In seeking this approval, the Applicant shall submit to the EPA the necessary information in order to determine that the activities undertaken during the varied operating hours will not have an adverse impact on the acoustic amenity of receptors within the vicinity of the site. Any request to the EPA to extend the operating hours specified in condition 0 shall be accompanied by:</p> <ul style="list-style-type: none"> a. at least six months of noise monitoring data of the shredder plant operating at design capacity and conducted in accordance with the <i>New South Wales Industrial Noise Policy</i> guideline (EPA, 2000); b. evidence demonstrating full compliance with all noise limits since commissioning the shredder plant; c. evidence that the plant would be able to comply with the evening noise limits specified in condition Error! Reference source not found. during the proposed extended hours of operation; and d. demonstration that the potential for explosions can be suitably managed at the site (and the associated potential impacts mitigated) during the proposed extended hours of operation. 		The shredder has not been operated between the hours of 6.00pm and 10.00pm	Compliant	

⁷ Incorporates an EPA General Term of Approval (L7.1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		Any approval by the EPA in accordance with the above condition shall be forwarded to the Director-General by the Applicant immediately.				
21.	4.8	⁸ Any extension in the shredder plant operating hours granted by the EPA under condition 0 shall be on the condition that the Applicant is able to demonstrate on-going compliance with the noise limits specified in 4.3 Should the noise limits specified in condition Error! Reference source not found. be regularly exceeded and/or if explosions become unmanageable at the site, and if the impacts have not been mitigated by the Applicant to the satisfaction of the EPA, the EPA may withdraw its approval under condition 0 at any time.		The shredder has not been operated between the hours of 6.00pm and 10.00pm	Compliant	
22.	4.8A	Operation Hours – Ancillary Activities Further to conditions 4.5 to 4.8 of this consent, the Applicant shall only undertake activities ancillary to the operation of the metal shredder, including the operation of all associated plant, equipment and machinery, loading/unloading of materials, materials handling and ingress/egress of heavy vehicles to/from the site, between 7:00am and 10:00pm Monday to Saturday, and at no time on Sunday or Public Holidays		Vehicle unloading was reported to occur up to 7.00pm daily (Monday to Friday). Maintenance activities were undertaken between the hours of 7am and 11.00pm	Compliant	
23.	4.8B	Notwithstanding condition 4.8A of this consent, the Applicant may seek the Director-General's approval to alter the hours of operation for ancillary activities specified under condition 4.8A. In seeking the Director-General's		No request to alter the hours of operation have been submitted.	Not triggered	

⁸ Incorporates an EPA General Term of Approval (L7.1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>approval, the Applicant shall provide the following information:</p> <ul style="list-style-type: none"> a. an appropriate level of noise assessment for activities to be undertaken within extended operation hours, prepared in accordance with the relevant guidance in the <i>Industrial Noise Policy</i> (EPA, 2000) and <i>Environmental Criteria for Road Traffic Noise</i> (EPA, 1999). The assessment shall also demonstrate compliance and consistency of the proposed extended activities with relevant noise limits and noise management criteria specified under this consent and the Environment Protection Licence for the site; b. details of consultation(s) with the EPA in relation to the proposed extended operation hours, with a demonstration that EPA requirements have been addressed; and c. details of community consultation(s) undertaken in relation to the proposed extended operation hours, with a demonstration that issues identified through community consultation have been addressed. Community consultation shall include, but not necessarily be limited to representative(s) of the St Joseph's Catholic Care of the Aged facility, and the Shortland and Birmingham Residents' Action Group. 				
24.	4.8C	Acoustic Barrier Deleted			Not Triggered	
25.	4.8D	Deleted			Not Triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
26.	4.8E	The Applicant shall install noise monitoring equipment at the St Joseph's Catholic Care of the Aged facility, in consultation with the owners of that property, and to the satisfaction of the Director-General. The Applicant shall operate the noise monitoring equipment on an on-going basis , as may be agreed with the St Joseph's Catholic Care of the Aged facility, to monitor noise impacts from the development on that property. All monitoring data shall be made available to the St Joseph's Catholic Care of the Aged facility. The Applicant may only cease noise monitoring in accordance with this condition, after having consulted with the St Joseph's Catholic Care of the Aged facility, and only with the agreement of the Director-General.	Quarterly Noise Monitoring Reports 2017-2020.	<p>Noise monitoring equipment has not been installed at St Joseph's Catholic Care of the Aged facility to monitor noise on an on-going basis.</p> <p>Quarterly monitoring conducted by AECOM.</p> <p>Recommendation:</p> <p>It is recommended that Infrabuild undertake an investigation to determine if the current monitoring program has been approved by DPIE. If no approval has been provided, then Infrabuild should implement noise monitoring in compliance with Condition 4.8E, or seek agreement from St Joseph's Catholic Care of the Aged facility, and the Director-General for a modification the requirement for continuous noise monitoring</p>	Non-compliant	03
27.	4.9	<p>Plant Retrofit</p> <p>⁹ As may be directed by the EPA to address noise emissions from the development, the Applicant shall undertake the following works:</p> <p>a. installation of additional noise controls to the shredder and associated plant;</p>		The EPA have not directed further plant retrofit for noise emission reduction.	Not triggered	

⁹ Incorporates an EPA General Term of Approval (E1.8)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		b. installation of noise controls to the scrap loading and unloading facilities; c. implementation of noise controls to ensure compliance with noise limits at adjoining industrial properties when operations on those properties commence; and d. installation of appropriate controls on the shredder stack out conveyor and associated area to reduce noise emissions.				
Traffic and Transport						
28.	4.10	Sparke Street Intersection ¹⁰ The Applicant shall construct, and pay the full cost of, traffic control signals at the Sparke Street/Pacific Highway intersection. These traffic signals shall be installed as a two-phase system to control northbound Pacific Highway, right turn in and left turn out movements only. The signals shall be coordinated with Shamrock Street signals and shall prohibit all right-hand turn movements out of Sparke Street. In association with these signals, the Applicant shall also undertake the following works: a. relocation of the Sparke Street/Pacific Highway intersection approximately 70-80 metres north of the current intersection and at right angles to the Pacific Highway;	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Intersection works completed in 2005. Verified previous audits.	Not triggered	

¹⁰ Incorporates an RTA General Term of Approval (1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<ul style="list-style-type: none"> b. construction of an indented right turn lane into Sparke Street within the central median that accommodates two B-Double vehicles and a deceleration lane; c. provision of a left turn deceleration lane into Sparke Street; d. provision of a left turn out of Sparke Street under signalisation; e. construction of appropriate physical barriers to prevent right-hand turn movements out of Sparke Street, with suitable signage reinforcing this ban; f. provision of flashing warning lights in advance of the northbound approach to Sparke Street to advise motorists of the traffic control signals; g. construction of a roadway (new Sparke Street alignment) from the Pacific Highway to the existing Sparke Street; h. closure of the median at the existing Sparke Street intersection, including the removal and making good of the obsolete part of Sparke Street; <p>¹¹removal of vegetation to maintain appropriate sight distances as required by RTA standards.</p> <p>These roadworks shall be at the full cost of the Applicant and shall be completed to RTA's and Council's satisfaction within three months of the commencement of operations at the site, unless otherwise agreed by the RTA and Council.</p>				

¹¹ Incorporates a Newcastle City Council General Term of Approval (1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
29.	4.11	<p>¹²The Applicant shall design the work specified in condition 0 in accordance with the RTA's Road Design Guide, AUSTROAD guidelines and relevant Australian Standards, as directed by the RTA. This shall include:</p> <ul style="list-style-type: none"> a. construction of auxiliary lanes for the 80 kph speed limit or the 85th percentile speed, which ever is the greater; b. provision for B-Doubles vehicle movements and storage; c. provision for on-road cyclists through the realigned Sparke Street intersection; and d. street lighting, sign posting and line marking along the realigned Sparke Street intersection and roadway. 	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Intersection works completed in 2005. Verified previous audits.	Not triggered	
30.	4.12	<p>¹³Prior to the commencement of any construction work associated with the development, the Applicant shall obtain the RTA's and Council's approval of the concept design of the road work specified in condition 4.10 and condition 4.11, and shall enter into a Works Authorisation Deed, detailing the timeframe for obtaining a final approval of these works, with the RTA under the section 138 of the <i>Roads Act 1993</i>.</p> <p>The Applicant shall forward the Director-General written evidence demonstrating that an approval of the concept design has been issued by the RTA and Council, and that a Works Authorisation Deed for the development has been</p>		Intersection works completed in 2005. Verified previous audits.	Not triggered	

¹² Incorporates a RTA General Term of Approval (1 & 3) and Newcastle City Council General Term of Approval (1)

¹³ Incorporates a RTA General Term of Approval (6)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		accepted by the RTA prior to the commencement of construction work.				
31.	4.13	¹⁴ Should the Applicant commence construction activities at the site prior to the completion of the work specified under condition 0, the Applicant shall implement measures to the satisfaction of Council and RTA to control traffic movements to and from the site to ensure that the efficiency and safety of the surrounding road network is not affected. The Applicant shall install these measures prior to the commencement of construction works at the development site and shall maintain the measures until the realigned intersection is fully operational.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Intersection works completed in 2005. Verified previous audits.	Not triggered	
32.	4.13A	Should the Applicant intend to commence operation of the development prior to the completion of the road works required under condition 0, 0 and 0 of this consent, the Applicant shall prepare and submit for the approval of the RTA and Council a Traffic Management Protocol. The Protocol shall be submitted to the RTA and Council no later than one month prior to the intended commencement of operation, unless otherwise agree to by the RTA and Council. The Protocol shall detail measures to manage traffic and potential conflict between roadworks, heavy vehicles associated with the development and existing traffic. The Protocol shall include, but not necessarily be limited to: a. procedures, systems and protocols for the management of operational traffic from the	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Intersection works completed in 2005. Verified previous audits.	Not triggered	

¹⁴ Incorporates a RTA General Term of Approval (4)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>development; its interaction with intersection (and any other roadworks) construction; and its interaction with Pacific Highway traffic during all stages of intersection (and any other roadworks) construction;</p> <p>b. details of how Pacific Highway traffic priority will be maintained; and</p> <p>c. details of how operational traffic will be eliminated during peak traffic periods.</p> <p>The Applicant shall not commence operation of the development until it has received written approval of the Protocol from both the RTA and Council, and shall implement the Protocol to the satisfaction of the RTA and Council until the roadworks required under this consent are completed.</p>				
33.	4.14	¹⁵ Land occupied by the realigned and widened intersection shall be dedicated as a road reserve at no cost to Council or the RTA prior to the commencement of operations at the site.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	The land has been dedicated as a road reserve (Newcastle Local Environmental Plan, 2012). – Verified previous audit.	Not Triggered	
34.	4.15	<p>Southbound U-Turn Facility</p> <p>¹⁶All southbound vehicles associated with the development departing the site shall not be permitted to undertake right-hand turn movements onto the Pacific Highway. These vehicles shall only utilise the U-turn facility located on the Applicant's property at the corner of New England Highway and Pacific Highway, Hexham (378 Maitland Road, Hexham). No other U-turn facility shall be used for this</p>		No provision to turn right is available at this intersection. Vehicles can only turn left onto the Pacific Highway, as sighted by the auditor.	Compliant	

¹⁵ Incorporates a RTA General Term of Approval (1) and Newcastle City Council General Term of Approval (1)

¹⁶ Incorporates a RTA General Term of Approval (2 & 4) and Newcastle City Council General Term of Approval (3)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		purpose, unless otherwise approved by the RTA and Council in accordance with condition 4.15(A). At no time shall southbound vehicles associated with the development use any street in a residential area for the purpose of conducting a U-turn. This includes Shamrock Street, Hexham.				
35.	4.15A	Should the U-turn facility specified in condition 4.15 become no longer available for the purposes of the condition, the Applicant shall construct an alternative U-turn facility under the Hexham Bridge with access to/from the highway to be provided via the Oak traffic control signals at a location and standard to be determined by the RTA and Council. This U-turn facility shall be constructed at the full cost to the Applicant and to the satisfaction of the RTA and Council. The alternative facility shall be fully operational prior to any restriction of access to the U-turn facility specified in condition 4.15 (or as otherwise required by the RTA and Council).		The U-turn facility is available.	Not Triggered	
36.	4.16	¹⁷ B-Doubles shall not utilise the U-turn facility located on Applicant's property at the corner of New England Highway and Pacific Highway, Hexham, without the prior approval of the RTA and Council.	Site interview	It was reported that B Doubles are directed to use the U turn facility located under Hexham bridge. Unable to verify communication of requirement.	Compliant	

¹⁷ Incorporates a RTA General Term of Approval (2)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
				(It was reported that B doubles are not used for local deliveries and utilise the M1, hence no U turns are required).		
37.	4.17	Northbound Vehicle Movements Heavy vehicle movements associated with the development travelling to and from the site to the Sydney Greater Metropolitan area shall only access the F3 via the New England Highway.	Site interview	Reported that all trucks to and from the Sydney Greater Metropolitan area access via the M1/ New England Hwy.	Compliant	
38.	4.18	Sparke Street ¹⁸ Prior to the commencement of any construction work associated with the development, excluding works associated with piling activities at Lots 29-30 DP 803794, the Applicant shall submit for the approval of Council a pavement design report investigating the suitability of the existing road pavement of Sparke Street from the realigned Sparke Street to the north-eastern boundary of Lot 30 DP803794. This report shall: <ul style="list-style-type: none"> a. be prepared and certified by a suitably qualified geotechnical engineer; b. be based on the anticipated vehicular traffic volumes and loadings associated with the development; and c. identify any pavement areas damaged as a result of the Applicant's operations that require rehabilitation to accommodate the increase traffic movements generated by the development. 	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audit	Not triggered	

¹⁸ Incorporates a Newcastle City Council General Term of Approval (5)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		Should any rehabilitation be required, these works shall be at the full cost of the Applicant and shall be completed to the satisfaction of Council within three months of the commencement of operations at the site, or as otherwise agreed to by Council				
39.	4.19	<p>¹⁹Within three months of the commencement of operations at the site, the Applicant shall reconstruct, to Council's satisfaction and at the full cost of the Applicant, the full width of Sparke Street from the north-eastern boundary of Lot 30 DP803794 to the south-western boundary of Lot 29 DP803794. The design of these works shall meet Council's requirements and shall include:</p> <ul style="list-style-type: none"> a. road pavement; b. road shoulder pavement; c. footway formation; d. associated drainage works; and e. reconstruction of the three existing vehicular driveway crossings to the existing operations located at Lot 1 DP874409. <p>Construction works associated with the development shall not commence until the Applicant has obtained Council's approval of the concept design plans for the above work. A copy of this approval shall be submitted to the Director-General prior to the commencement of any construction work.</p>	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audit	Not triggered	

¹⁹ Incorporates a Newcastle City Council General Term of Approval (16)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		Prior to the commencement of the road works specified in the condition, the Applicant shall obtain Council's approval of the final design plans for these works.				
40.	4.20	<p>Site Access, Internal Roads and Parking</p> <p>The Applicant shall ensure that all heavy vehicles enter and leave the site in a forward direction.</p>	<p>Hexham Traffic Management Plan (HEX-OPS-PC-SOP-602)</p> <p>Hexham Driver (Contractor Induction Procedure</p>	<p>The Hexham Traffic Management Plan (HEX-OPS-PC-SOP-602) shows the direction of traffic flow. A SOP details sign off for employees and contract drivers who have separate inductions including traffic management and a copy of this was sighted.</p> <p>All vehicles were sighted entering and leaving the site in a forward direction.</p> <p>Contract drivers undertake The Hexham Driver (Contractor Induction Procedure was sighted).</p> <p>Hexham Driver Induction sighted – Provides requirements or drivers while on site only. Includes dos and Don'ts for drivers.</p> <p>Includes site vehicle movements. Does not specifically include site requirements for heavy vehicle routes to and from the site.</p>	Compliant	
41.	4.21	Vehicles associated with the construction or operation of the development shall be accommodated on site at all times.	Site Inspection	All vehicles associated with operation were observed to be accommodated on site.	Compliant	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
42.	4.22	Landscaping and any other obstructions to visibility shall not affect driver sight distance for vehicles entering and exiting the site.	Site Inspection	No obstructions to visibility for vehicles were observed. The need to maintain visibility for drivers is included in the Landscape Management Plan.	Compliant	
43.	4.23	Prior to the commencement of any transport to the site involving B-double vehicles, the Applicant shall demonstrate to the satisfaction of the Director-General that the B-double reclassification of Sparke Street has been approved by the RTA in association with Council.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audit	Not triggered	
44.	4.24	The Applicant shall design and construct all internal road works, including the associated parking facilities, line marking (or similar) and loading bays, in accordance with the relevant RTA and Council standards and codes, including AS 2890.1-1993 and AS 2890.2-2002.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audit	Not triggered	
45.	4.25	Internal roads, driveways, parking areas, loading bays and vehicular turning areas shall be maintained clear of obstruction and used exclusively for the purposes of parking, vehicle access and loading and unloading respectively. Under no circumstances shall these areas be used for the storage of goods or waste materials or any other purpose.	Site Inspection	No internal road obstructions were observed. A dedicated person manages the traffic as it arrives on site and are responsible for ensuring parking areas are maintained.	Compliant	
46.	4.26	The Applicant shall ensure that there is sufficient carparking facilities provided on site to cater for the maximum number of employees, customers/visitors, service vehicles and heavy vehicles associated with the operation of the development at any one time.	Site Inspection	Approximately 70 carparks are provided, which is adequate to cater for staff and visitors.	Compliant	
47.	4.27	The Applicant shall clearly mark all visitor, disabled, and service vehicle parking areas.	Site Inspection	These parking areas were clearly marked.	Compliant	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
48.	4.28	The Applicant shall install signage to demarcate all vehicle movements within and between Lots 29-30 DP803794 and Lot 1 DP874409.	Site Inspection	This signage is provided as sighted by the auditor.	Compliant	
Air Quality Impacts						
49.	4.29	<p>Dust Emissions</p> <p>The Applicant shall design, construct, commission, operate and maintain the development in a manner that minimises dust emissions from the site. All activities undertaken on the site shall be carried out in a manner that minimises the generation of dust, and emission of dust from the site, including wind-blown and traffic-generated dust.</p>	Site Inspection	<p>Dust suppression activities are undertaken to minimise dust levels. These include:</p> <ul style="list-style-type: none"> • Water trucks: spraying water across the plant area to minimise dust levels; • Sweepers – Dust sweepers utilized across the site; • Dust suppression unit – installed within • the shredder unit to minimize dust emission from the shredder operation. • Water sprays on conveyors. • Landscaping of open areas. 	Compliant	
50.	4.30	<p>Plant Retrofit</p> <p>²⁰As may be directed by the EPA to address dust emissions from the development, the Applicant shall undertake the following works:</p> <p>a. installation of appropriate litter controls on the shredder stack out conveyor and associated area to minimise the possibility of dust emissions;</p>	Site Inspection	<p>The following dust suppression techniques are being used onsite:</p> <ul style="list-style-type: none"> • Litter controls on the shredder stack out conveyor and associated area. • Water trucks: spraying water across the plant area to minimise dust levels; • Sweepers – Dust sweepers utilized across the site; 	Compliant	

²⁰ Incorporates a EPA General Term of Approval (E1.8)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #												
		<p>b. installation of dust controls on plant conveyors and floc storage; and</p> <p>c. implementation of dust and water quality controls at the site and any part of Sparke Street that is under the control of the Applicant.</p>		<ul style="list-style-type: none">Dust suppression unit – installed within the shredder unit to minimize dust emission from the shredder operation.Water sprays on conveyors														
51.	4.31	<p>Shredder</p> <p>The Applicant shall design, construct, commission and operate the development to ensure that the concentrations of Total Solid Particles, lead (Pb), and mercury (Hg) discharges from the shredder plant do not exceed the limits specified in Table 3.</p> <p>Table 3 – Maximum Allowable Discharge Concentration Limits (Air)</p> <table><tr><th>Pollutant</th><th>Maximum Allowable Discharge Concentration Limit</th><th>Reference Conditions</th></tr><tr><td>Lead (Pb)</td><td>5.0mg/m³</td><td>dry, 273K, 101.3kPa</td></tr><tr><td>Mercury (Hg)</td><td>1.0mg/m³</td><td>dry, 273K, 101.3kPa</td></tr><tr><td>Total Solid Particles</td><td>100/m³</td><td>dry, 273K, 101.3kPa</td></tr></table>	Pollutant	Maximum Allowable Discharge Concentration Limit	Reference Conditions	Lead (Pb)	5.0mg/m ³	dry, 273K, 101.3kPa	Mercury (Hg)	1.0mg/m ³	dry, 273K, 101.3kPa	Total Solid Particles	100/m ³	dry, 273K, 101.3kPa	<p>Annual Environmental Management Report 2017</p> <p>Annual Environmental Management Report 2018</p> <p>Annual Environmental Management Report 2019</p> <p>InfraBuild Recycling Hexham</p> <p>Quarterly Noise Monitoring Report - Quarter 1 2020</p> <p>InfraBuild Recycling Hexham</p> <p>Quarterly Noise Monitoring Report - Quarter 2 2020</p> <p>InfraBuild Recycling Hexham</p> <p>Quarterly Noise Monitoring Report - Quarter 3 2020</p>	<p>Quarterly stack emission monitoring conducted.</p> <p>Results for period January 2017 – September 2020 reviewed. All results were less than maximum allowable discharge concentrations.</p>	Compliant	
Pollutant	Maximum Allowable Discharge Concentration Limit	Reference Conditions																
Lead (Pb)	5.0mg/m ³	dry, 273K, 101.3kPa																
Mercury (Hg)	1.0mg/m ³	dry, 273K, 101.3kPa																
Total Solid Particles	100/m ³	dry, 273K, 101.3kPa																

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
52.	4.32	²¹ The Applicant shall ensure that all process related fabric filters installed on the site are fitted with a bag leak detection and alarm system to the satisfaction of the EPA.		The baghouse is fitted with an alarmed bag leak detection system located in the main operator panel. Notifies control room operator.	Compliant	
Soil and Water Quality Impacts						
53.	4.33	The Applicant shall take all reasonable measures to minimise soil erosion and the discharge of sediments and pollutants from the site during construction and operation.	<p>Site Inspection</p> <p>Stormwater Quality Improvement Device Clean Report – Jul-20 – Urban Asset Solutions</p>	<p>Measures that were sighted to prevent the discharge of sediments and pollutants from the site during operation include:</p> <ul style="list-style-type: none"> • Shredder flush pit • Dust suppression water sprays on conveyors • Waste oil storage bund • Non-ferrous first flush pit and bag • Gross pollutant traps • Detention ponds • Oil water separators <p>Maintenance of the control measures is conducted regularly by Asset Urban Solutions who conduct regular inspections – Inspection and cleaning record sighted for 4 July 2020 (Cleanout of detention ponds, sediment bay and gross pollutant traps (GPTs)).</p>	Compliant	

²¹ Incorporates an EPA General Term of Approval (E1.7)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
54.	4.34	<p>Stormwater</p> <p>²²The stormwater management infrastructure shall be designed, where practicable, to ensure that the time of concentration is limited to 10 minutes in the design storm event. Interception pits shall be installed where required to ensure that contaminated stormwater does not reach the first flush pit once it has reached its maximum capacity.</p>	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audit	Not Triggered	
55.	4.35	During the construction and operation of the development, the Applicant shall prevent the discharge of stormwater originating from the site onto the neighbouring railway corridor (unless otherwise approved by State Rail).	Site Inspection	There is a stormwater channel between the site and the railway corridor which was sighted. There have not been any reported instances of stormwater entering the railway corridor from the site.	Compliant	
56.	4.36	<p>Acid Sulfate Soils</p> <p>Prior to the commencement of construction of the development, the Applicant shall undertake acid sulfate soil testing for areas of the site to be disturbed during site construction. Acid sulfate soil testing shall be consistent with the EPA's Environmental Guideline Assessing and Managing Acid Sulfate Soil and the Acid Sulfate Soil Management Advisory Committee (ASSMAC) document Acid Sulfate Soil Manual. Should testing indicate that any potential or actual acid sulfate soils may be disturbed during site preparation works or the construction of the facility, the Applicant shall prepare an Acid Sulfate Soil Management Plan (refer to condition 0).</p>	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audit	Not Triggered	
Waste Management						

²² Incorporates an EPA General Term of Approval (E1.2)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
57.	4.37	The Applicant shall not receive waste at the site for storage, treatment, processing or reprocessing, and shall not dispose of waste generated by the development on the site, except as may be expressly permitted by an Environment Protection Licence for the development under the <i>Protection of the Environment Operations Act 1997</i> .	Site Inspection	Recycled waste is received for processing. There was no visual evidence of waste being received that is not specified in the Environment Protection Licence. Operational Environmental Procedures were available, e.g. PRO-056 – Unacceptable Scrap Manual details the waste that is not accepted and responsibilities. PRO-018 – Incoming Scrap Deliveries Procedure PRO045 – Asbestos Management Procedure.	Compliant	
58.	4.38	²³ The Applicant shall ensure that uncompacted motor vehicles are only received, stored, drained of fluids and decontaminated in a dedicated area that is separately bunded to contain and store liquids drained from vehicles before they are forwarded to the main scrap receipt area.	Site Inspection	Dedicated area for receipt and processing of motor vehicles on the front pad of the scrap receipt/ infeed area (front pad), which drains to the first flush pit. Cars are inspected prior to acceptance on site to ensure no liquids are on board. Verified during site inspection	Compliant	
Visual Amenity						
59.	4.39	The Applicant shall ensure that all new external lighting associated with the development is mounted, screened, and directed in such a manner so as not to create a	OneSteel Recycling Hexham Independent Environmental	Verified previous audit.	Not Triggered	

²³ Incorporates EPA General Term of Approval (E1.5)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		nuisance to surrounding land uses. The lighting shall be the minimum level of illumination necessary, and be in general accordance with <i>AS 4282 – 1997 Control of the Obtrusive Effects of Outdoor Lighting</i> .	Compliance Audit Report, 6 June 2017	No new lighting has been installed since the previous audit		
60.	4.40	The Applicant shall not utilise Lot 31 DP 803794 for the purposes of temporary or permanent storage of waste material or any item of equipment.	Site Inspection	Lot 31 DP 803794 was observed as not being used for storage.	Compliant	
61.	4.41	All containers used for the transportation of scrap metal shall be contained on-site at all times.	Site Inspection	All containers were observed to be on site.	Compliant	
62.	4.42	Nothing in this consent allows the Applicant to erect or display any advertising structure(s) or advertisements associated with the development. Note: The Applicant must seek development consent from Council for the erection of advertising structures.	Site Inspection	No advertising was observed.	Compliant	
63.	4.43	Landscaping Prior to the commencement of operations at the site, where practicable, dense screen planting shall be undertaken by the Applicant at all locations where the works associated with the development will be visible, using native tree and shrub species endemic to the area, suited to local soil conditions and consistent with those in the surrounding landscape.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	A landscape management plan (see 7.5e) has been produced for the site and landscaping has been conducted using native species. Verified previous audit.	Compliant	
64.	4.44	The Applicant shall landscape the site in accordance with condition 0 and the Landscape Management Plan referred to under condition 7.4e) for the development, and maintain this landscaping for the full life of the development.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audits.	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		Landscaping works shall not commence until the Director-General has approved the Landscape Management Plan.				
65.	4.45	Within 90 days of completing the landscape works outlined in the Landscape Management Plan (refer to condition 0d), the Applicant shall submit a Landscape Completion Report to the Director-General, which demonstrates that the landscaping works have been completed in accordance with the approved Plan.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audits.	Not triggered	
Dangerous Goods						
66.	4.46	All chemicals, fuels and oils shall be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. Bunds shall be designed and installed in accordance the requirements of the EPA's <i>Environmental Protection Manual Technical Bulletin Bunding and Spill Management</i> .	Site Inspection	<p>Bunded storage facilities provided for chemical storage on site.</p> <p>During the site inspection, it was noted that several containers for chemicals and liquid waste were stored in unbunded areas.</p> <p>Recommendation:</p> <p>All chemicals containers should be stored in bunded areas which comply with the requirements of the EPA's Environmental Protection Manual Technical Bulletin Bunding and Spill Management.</p>	Non-compliant	04
Flood Work						
67.	4.47	Prior to the commencement of any construction work at the site, the Applicant shall obtain necessary approvals	OneSteel Recycling Hexham Independent Environmental	Verified previous audits.	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		from the Department (Hunter Region) under section 256 of the Water Management Act 2000.	Compliance Audit Report, 6 June 2017			
68.	4.48	The development shall be carried out strictly in accordance with the recommendations of the Flood Report, titled Rationalisation of Floodways connecting Hexham Swamp to the Hunter River (Issue 2) prepared by Patterson Britton and dated July 2003.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audits.	Not triggered	
Railway Corridor						
69.	4.49	Prior to the commencement of any construction work at the site within 50 metres of the neighbouring railway corridor at the site, the Applicant shall submit to RIC a Risk Assessment/Management Plan and detailed Work Method Statement to ensure construction activities do not impact on the integrity of the railway corridor. The Applicant shall obtain the approval from RIC prior to the commencement of any construction activities within the above 50 metres buffer area and shall implement any conditions imposed by RIC as part of these approvals.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Verified previous audits.	Not triggered	
70.	4.50	Any use of a crane, plant or machinery on site shall comply with the RIC's Electrical Safety Manual and all relevant RIC standards and guidelines. The Applicant shall not operate any crane, plant or machinery within three metres (horizontally) of any electrified infrastructure, or within a distance that has the potential to reach over the rail corridor at any time.		No cranes used on site during the operation phase.	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
71.	4.51	The Applicant shall ensure that no metal ladders, scaffolding, plant/machinery or conductive material is used on site within 6 horizontal metres of any live electrical equipment associated with the rail corridor infrastructure.	Site Inspection	All activities are on restricted to the site with a boundary fence which is greater than 6 metres from the rail corridor.	Compliant	
72.	4.52	<p>The Applicant shall not undertake any work within the rail corridor or it's easements at any time unless prior approval has been granted by State Rail or an Access Deed has been entered into between the Applicant and State Rail. Should work be required in these areas, the Applicant shall bear the full cost associated with obtaining the approval or Access Deed and any required supervision, design checks, meetings and/or service searches.</p> <p>Should the Applicant require access to the rail corridor prior to gaining the above approval or Access Deed, the Applicant shall be required to enter into a Release and Indemnity agreement prior to accessing the rail corridor or associated easements.</p>		No work has been undertaken within the rail corridor.	Not Triggered	
73.	4.53	Prior to the commencement of operations at the site, the Applicant shall install appropriate fencing along the common boundary of the site and the adjoining railway corridor at Lot 29 DP803794 and lot 1 DP 874409 to the satisfaction of State Rail and at the full cost of the Applicant. The design of the fencing shall be approved by State Rail prior to the installation of the fencing.	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	<p>Appropriate fencing has been installed as sighted during the audit.</p> <p>Approval verified during previous audits.</p>	Compliant	
ENVIRONMENTAL MONITORING AND AUDITING						
Noise Monitoring and Auditing						

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
	5.1	<p>²⁴Within 90 days of commencement of operation of the development, and during a period in which the development is operating under design loads and normal operating conditions, the Applicant shall conduct a Noise Audit of its operations. This Audit shall:</p> <ul style="list-style-type: none"> a. be undertaken by a suitability qualified and experienced person; b. assess whether the development is complying with the intrusive and amenity noise criteria, and the predicted noise levels detailed in documents specified in condition 0b) and condition 0e of this consent; c. identify what additional measures could be implemented to ensure compliance should any non-compliance be detected; and d. provide details of any complaints received relating to noise generated by the development, and action taken to respond to those complaints. 	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Noise audit conducted 2005. Verified previous audits.	Not triggered	
	5.2	<p>²⁵Within 28 days of conducting the Audit referred to under condition 0 of this consent, the Applicant shall provide the Director-General and EPA (Hunter) with a copy of the Noise Audit report. If the Audit identifies any non-compliance with the noise limits imposed under this consent, the Applicant shall detail what additional measures would be implemented to ensure compliance, clearly indicating who would implement these measures, when these measures would be implemented, and how the effectiveness of these</p>	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Noise audit conducted 2005. Verified previous audits.	Not triggered	

²⁴ Incorporates an EPA General Term of Approval (E1.9.1)

²⁵ Incorporates an EPA General Term of Approval (E1.9.2)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		measures would be measured and reported to the Director-General and the EPA.				
74.	5.3	<p>The Applicant shall prepare and implement a Noise Monitoring Program to monitor noise impacts associated with the development. The Program shall be consistent with guidelines provided in <i>New South Wales Industrial Noise Policy</i> (EPA, 2000) and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a. identification of noise monitoring locations, with relevant noise limits for each location provided; b. noise monitoring frequencies; and c. methodologies for noise monitoring. <p>The Noise Monitoring Program shall be submitted for the approval of the Director-General prior to the commencement of operation of the development, or within such period as the Director-General may agree.</p>	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	<p>Noise Monitoring program included in OEMP has been implemented.</p> <p>Quarterly noise monitoring conducted by noise consultant.</p> <p>Approval of Noise Monitoring program verified previous audits.</p>	Compliant	
75.	5.4	<p>Overpressure and Vibration Monitoring</p> <p>²⁶The Applicant shall install, maintain and operate suitable instrumentation, in accordance with Australian Standard 2187.2-1993, to monitor overpressure and vibration caused by explosions on the site to the satisfaction of the EPA.</p>	<p>Annual Environmental Management Report 2017</p> <p>Annual Environmental Management Report 2018</p> <p>Annual Environmental Management Report 2019</p>	<p>Overpressure and vibration monitoring instruments have been installed permanently at the site and monitoring is conducted by consultants.</p> <p>No blasts have been measured during the period covered by the current audit.</p> <p>No complaints have been received in relation to excessive overpressure or vibration.</p>	Compliant	

²⁶ Incorporates an EPA General Term of Approval (M8.1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #												
Air Quality Monitoring																		
76.	5.5	Shredder Stack Emissions ²⁷ All air emission stacks shall be fitted with sampling points which comply with the <i>Clean Air (Plant and Equipment) Regulation 1997</i> and Australian Standard 4323.1-1995.	Quarterly Emissions Testing Reports - AECOM	Emission stacks are fitted with sampling Points. Monitoring quarterly by AECOM Australia (NATA accreditation no. 2778). Verifies sampling performed to AS4323.1.	Compliant													
77.	5.6	The Applicant shall periodically determine the pollutant concentrations specified in Table 4, as discharged from the shredder plant employing the sampling and analysis method specified and at the frequency indicated in the table. All monitoring shall be carried out strictly in accordance with <i>Approved Methods for the Sampling and Analysis of Air Pollutants in NSW</i> (EPA 2001). Table 4 – Periodic Pollutant Monitoring (Air) <table><tr><th>Pollutant</th><th>Method</th><th>Frequency</th></tr><tr><td>Lead</td><td>TM-12, TM-13 & TM-14</td><td>Post commissioning, annually</td></tr><tr><td>Mercury</td><td>TM-12, TM-13 & TM-14</td><td>Post commissioning, annually</td></tr><tr><td>Total solid particles</td><td>TM-15</td><td>Post commissioning, annually</td></tr></table>	Pollutant	Method	Frequency	Lead	TM-12, TM-13 & TM-14	Post commissioning, annually	Mercury	TM-12, TM-13 & TM-14	Post commissioning, annually	Total solid particles	TM-15	Post commissioning, annually	Quarterly Emissions Testing Reports - AECOM	Quarterly stack emission monitoring conducted by consultant in accordance with conditions of consent. Air monitoring reports state monitoring conducted using the methods specified with the exception of Total Solid particles, which references AS4323.3 as the NSW EPA approved method.	Compliant	
Pollutant	Method	Frequency																
Lead	TM-12, TM-13 & TM-14	Post commissioning, annually																
Mercury	TM-12, TM-13 & TM-14	Post commissioning, annually																
Total solid particles	TM-15	Post commissioning, annually																
78.	5.7	The Applicant may seek the approval of the Director-General to alter the frequency of the pollutant/parameter monitoring required under condition 0 of this consent. Any request for approval shall only be provided if: a. pollutant/parameter monitoring has been undertaken for a period of no less than 12 months (measures		No approval has been sought.	Not Triggered													

²⁷ Incorporates an EPA General Term of Approval (E1.6)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>from the commencement of operation of the development);</p> <p>b. there has been no exceedence of any limit placed on the subject pollutant or parameter through this consent within the preceding 12-month period; and/or</p> <p>c. if there is a relevant Environment Protection Licence for the development that requires air pollutant monitoring which is inconsistent with the requirements under condition 0.</p>				
79.	5.8	<p>Performance Monitoring</p> <p>Within 90 days of commencement of operation of the development, and during a period in which the facility is operating under design loads and normal operating conditions, the Applicant shall undertake an air quality audit for the development and undertake dispersion modelling for all air pollutants identified in condition 0 to confirm the air emission performance of the facility.</p>	<p>Air Quality Impact Assessment - Smorgon Steel Recycling Hexham NSW 2322</p> <p>24 November 2005</p> <p>Email correspondence from Murray Cameron 15/09/2005.</p>	<p>Air Quality audit conducted by HLA Envirosciences. Site inspection, including monitoring conducted 4/10/2005, with the Report completed in November 2005.</p> <p>Correspondence sighted identifying that post commissioning operating commenced on 1/08/2005.</p>	Compliant	
80.	5.9	<p>Within 28 days of conducting the Audit, referred to under condition 0 of the consent, the Applicant shall provide the Director-General with a copy of the Air Quality Audit report. If the Audit identifies any non-compliance with the air quality limits or performance measures specified in the EIS, condition 0 of this consent, and the EPA's Impact Assessment Criteria described in <i>Approved Methods and Guidance for the Modelling and Assessment of Air Pollutants in NSW</i>, then the Applicant shall undertake an Air Quality Mitigation Study to provide details of remedial</p>	<p>Independent Environmental Audit – Smorgon Steel Recycling, 29 March 2007.</p>	<p>This condition was reported as compliant in the 2007 IEA conducted by HLA Envirosciences.</p>	Compliant	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #																																																		
		measures that the Applicant will implement to reduce air quality impacts to the levels required, clearly indicating who would implement these measures, when these measures would be implemented, and how the effectiveness of these measures would be measured and reported to the Director-General.																																																						
81.	5.10	<p>Meteorological Monitoring</p> <p>²⁸The Applicant shall monitor the parameters specified in Table 5, using the specified units of measure, averaging period, frequency, and sampling method in the table.</p> <p>Table 5 – Meteorological monitoring</p> <table><tr><th>Parameter</th><th>Units of Measure</th><th>Averaging Period</th><th>Frequency</th><th>Method</th></tr><tr><td>Rainfall</td><td>mm</td><td>1 Day</td><td>Daily</td><td>AM-4</td></tr><tr><td>Wind Speed @ 10m</td><td>m/s</td><td>15 minute</td><td>Continuous</td><td>AM-2 and AM-4</td></tr><tr><td>Wind Direction @ 10m</td><td>°</td><td>15 minute</td><td>Continuous</td><td>AM-2 and AM-4</td></tr><tr><td>Temperature @ 10m</td><td>°C</td><td>15 minute</td><td>Continuous</td><td>AM-4</td></tr><tr><td>Temperature @ 2m</td><td>°C</td><td>15 minute</td><td>Continuous</td><td>AM-4</td></tr><tr><td>Sigma Theta @ 10m</td><td>°</td><td>15 minute</td><td>Continuous</td><td>AM-4</td></tr><tr><td>Additional Requirements</td><td></td><td></td><td></td><td></td></tr><tr><td>- Siting</td><td></td><td></td><td></td><td>AM-1 & Am-4</td></tr><tr><td>- Measurement</td><td></td><td></td><td></td><td>AM-2 and AM-4</td></tr></table>	Parameter	Units of Measure	Averaging Period	Frequency	Method	Rainfall	mm	1 Day	Daily	AM-4	Wind Speed @ 10m	m/s	15 minute	Continuous	AM-2 and AM-4	Wind Direction @ 10m	°	15 minute	Continuous	AM-2 and AM-4	Temperature @ 10m	°C	15 minute	Continuous	AM-4	Temperature @ 2m	°C	15 minute	Continuous	AM-4	Sigma Theta @ 10m	°	15 minute	Continuous	AM-4	Additional Requirements					- Siting				AM-1 & Am-4	- Measurement				AM-2 and AM-4	Annual Environmental Management Report 2017 Annual Environmental Management Report 2018 Annual Environmental Management Report 2019	Weather station installed in north western corner of the site. Measures identified parameters. Results reported in AEMR.	Compliant	
Parameter	Units of Measure	Averaging Period	Frequency	Method																																																				
Rainfall	mm	1 Day	Daily	AM-4																																																				
Wind Speed @ 10m	m/s	15 minute	Continuous	AM-2 and AM-4																																																				
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- Siting				AM-1 & Am-4																																																				
- Measurement				AM-2 and AM-4																																																				
Water Quality Monitoring																																																								
82.	5.11	<p>Prior to the commencement of operations at the site, the Applicant shall submit for the approval of the Director-General, a Stormwater Quality Monitoring Program. This program shall form part of the Stormwater Operational Environmental Management Plan required by condition Od. The Program shall include but not necessarily be limited to:</p> <p>a. identification of contaminants to be tested;</p>	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Operations Environmental Management Plan states Stormwater Quality Monitoring Program prepared by Consultants – HLA-Envirosciences Pty Limited 23/11/2004. Verified previous audit. Updated Surface Water Mitigation and Monitoring Plan (AECOM, 29/04/2020)	Compliant																																																			

²⁸ Incorporates an EPA General Term of Approval (M7.1)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		b. monitoring frequencies; and c. methodologies for stormwater quality monitoring. The Stormwater Quality Monitoring Program shall be submitted for the approval of the Director-General prior to the commencement of operation of the development.		prepared. Section 5 includes stormwater monitoring program. Stormwater monitoring conducted after rainfall greater than 15mm in a 24-hour period at two monitoring locations. • Site 1 – discharge into Ironbark Creek; and • Site 2 – outlet from first flush tank to the drain on south-western boundary.		
Independent Environmental Auditing						
83.	5.12	Within two years of the commencement of construction of the development, and then as may be directed by the Director-General, the Applicant shall commission an independent person or team to undertake an Environmental Audit of the development. The independent person or team shall be approved by the Director-General prior to the commencement of the Audit. The Audit shall: <ul style="list-style-type: none"> a. be carried out in accordance with <i>ISO 19011:2002 - Guidelines for Quality and/or Environmental Management Systems Auditing</i>; b. assess compliance with the requirements of this consent, and other licences and approvals that apply to the development c. assess the environmental performance of the development against the predictions made and conclusions drawn in the documents referred to under condition 0 of this consent; and 		IEA Completed by HLA Envirosciences in 2007. IEA conducted by Coffey on 19 December 2016. Final report provided to DPIE 16/01/2017. Updated with final report submitted 7/06/2017.	Compliant	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>d. review the effectiveness of the environmental management of the development, including any environmental impact mitigation works.</p> <p>An Environmental Audit Report shall be submitted to the Director-General within two months of the completion of the Audit, detailing the findings and recommendations of the Audit and including a detailed response from the Applicant to any of the recommendations contained in the Report.</p>				
COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT						
84.	6.1	Subject to confidentiality, the Applicant shall make all documents required under this consent available for public inspection on request.	https://www.infrabuild.com/en-au/resource-centre/environmental	<p>Monitoring data published on company website.</p> <p>Documents were available on site for viewing if requested.</p> <p>Documents and monitoring records made available through the CCC.</p>	Compliant	
Complaints Procedure						
85.	6.2	<p>Prior to the commencement of operations at the development site, the Applicant shall ensure that the following are available for community complaints:</p> <p>a. a 24-hour, toll-free telephone number on which complaints about the development may be registered;</p> <p>b. a postal address to which written complaints may be sent; and</p>		<p>A contact phone number is provided the OneSteel web site. Other contact details including an email address are provided on the internet site.</p> <p>CCC members have contact details for site.</p>	Compliant	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>c. an email address to which electronic complaints may be transmitted.</p> <p>The telephone number, the postal address and the email address shall be advertised on at least one occasion prior to the commencement of construction of each stage of the development, through a medium approved by the Director-General. These details shall also be provided on the Applicant's internet site, should one exist. The telephone number, the postal address and the email address shall be maintained throughout the life of the development.</p>				
86.	6.3	<p>The Applicant shall record details of all complaints received through the means listed under condition 0 of this consent in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a. the date and time, where relevant, of the complaint; b. the means by which the complaint was made (telephone, mail or email); c. any personal details of the complainant that were provided, or if no details were provided, a note to that effect; d. the nature of the complaint; e. any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and f. if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken. <p>The Complaints Register shall be made available for inspection by the Director-General upon request.</p>	<p>Complaints Register 2017</p> <p>Complaints Register 2018</p> <p>Complaints Register 2019</p> <p>Complaints Register 2020</p> <p>Letter to EPA – Dust Compliant 2/08/2019</p> <p>Letter to EPA – Smoke Complaint 14/06/2019</p>	<p>Complaints register maintained.</p> <p>2017 – No complaints received.</p> <p>2018 – No complaints received.</p> <p>2019 – 4 complaints received.</p> <p>2020 – No complaints received.</p> <p>Records showed that information relating to the receipt of the complaint and corrective actions implemented had been recorded.</p> <p>Complaints are entered into the Incident and Risk Management System for follow up and close out.</p> <p>Cority GFG has recently been implemented for managing incidents, including complaints.</p>	Compliant	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
Community Consultative Committee						
87.	6.4	Prior to the commencement of construction of the development, the Applicant shall establish a Community Consultative Committee for the development to provide a forum for the discussion of the environmental performance of the development, provision of relevant data, and the receipt of community complaints and concerns. The Committee shall include, but not necessarily limited to representatives from the St Joseph's Catholic Care of the Aged facility and the Shortland and Birmingham Residents' Action Group. The Applicant shall ensure that the Committee meets on at least one occasion prior to the commencement of construction of the development to establish arrangements for the location, timing and operation of the Committee. The Committee shall meet at least monthly during the first six months of operation of the development, after which meeting frequency shall be by agreement between the Applicant and the Committee, and for the approval of the Director-General.		<p>A Community Consultative Committee (CCC) has been established and meetings usually held every second month. Minutes of meeting held in October 2020 were sighted. Noted that the meeting was conducted remotely due to COVID-19 restrictions.</p> <p>Meetings planned for April to August 2020 were not held due to COVID-19 restrictions.</p> <p>CCC meetings were chaired by the Shredder Manager.</p>	Compliant	
ENVIRONMENTAL MANAGEMENT						
Environmental Representative						
	7.1	Prior to the commencement of construction of the development, the Applicant shall nominate a suitably qualified and experienced Environmental Representative(s). The Applicant shall employ the Environmental Representative(s) on a full-time basis during the construction, commissioning and operation of the development. The Environmental Representative shall be:		Vince Chaplin was the Environmental Representative (ER) during construction and operation until Brad Sobczak became the ER in 2015. Glen Schrader, the Shredder Manager, is now the ER and is responsible for environmental matters. An email to David Bell of the EPA advising of	Non-Compliant	05

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>a. the primary contact point in relation to the environmental performance of the development;</p> <p>b. responsible for all Management Plans and Monitoring Programs required under this consent;</p> <p>c. responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development;</p> <p>d. responsible for receiving and responding to complaints in accordance with condition 0 and condition 0 of this consent; and</p> <p>e. given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.</p> <p>The Applicant shall notify the Director-General of the name and contact details of the Environmental Representative upon appointment, and any changes to that appointment that may occur from time to time.</p>		<p>the change was provided but it could not be verified if this information has been provided to the DG.</p> <p>Paul Smith – Site Manager is now the ER.</p> <p>Evidence that the EPA and DPIE had been formally advised of the change to the ER was not available.</p> <p>Recommendation:</p> <p>Infrabuild should formally notify DPIE and the EPA of changes to the appointment of the environmental representative, including provision of their name and contact details.</p>		
Construction Environmental Management Plan						
88.	7.2	<p>The Applicant shall prepare and implement a Construction Environmental Management Plan to outline environmental management practices and procedures to be followed during the construction of any stage of the development. The Plan shall include, but not necessarily be limited to:</p>	<p>OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017</p>	<p>Construction completed 2005.</p> <p>Verified previous audits.</p>	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>a. a description of all activities to be undertaken on the site during construction of the development, including an indication of stages of construction, where relevant;</p> <p>b. statutory and other obligations that the Applicant is required to fulfil during construction, including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;</p> <p>c. specific consideration of measures to address any requirements of Council during construction;</p> <p>d. details of how the environmental performance of the construction works will be monitored, and what actions will be taken to address identified adverse environmental impacts;</p> <p>e. a description of the roles and responsibilities for all relevant employees involved in the construction of the development;</p> <p>f. the Management Plans listed under condition 0 of this consent;</p> <p>g. arrangements for community consultation and complaints handling procedures during construction.</p> <p>The Plan shall be submitted for the approval of the Director-General prior to the commencement of construction, or within such period otherwise agreed by the Director-General. Construction shall not commence until written approval has been received from the Director-General. Upon receipt of the Director-General's approval,</p>				

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		the Applicant shall supply a copy of the Plan to Council, as soon as practicable.				
89.	7.3	<p>As part of the Construction Environmental Management Plan for the development, required under condition 0 of this consent, the Applicant shall prepare and implement the following Management Plans:</p> <ul style="list-style-type: none"> a. an Acid Sulfate Soil Management Plan to detail measures to be implemented in relation to the management and handling of any potential or actual acid sulfate soils identified in accordance with condition 0 of this consent. The Plan shall be prepared in accordance with guidance provided in Acid Sulfate Soil Manual (Acid Sulfate Soil Management Advisory Committee, 1998) and to meet the requirements of Director-General and Council. The Acid Sulfate Soil Management Plan need only be prepared should potential or actual acid sulfate soils be identified on the site. b. an Erosion and Sedimentation Management Plan to detail measures to minimise erosion during construction of the development. The Plan shall include, but not necessarily be limited to: <ul style="list-style-type: none"> i. results of investigations into soils associated with the site, in particular the stability of the soil and its susceptibility to erosion; ii. details of erosion, sediment and pollution control measures and practices to be implemented during construction of the development; 	OneSteel Recycling Hexham Independent Environmental Compliance Audit Report, 6 June 2017	Construction completed 2005. Verified previous audits.	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<ul style="list-style-type: none"> iii. demonstration that erosion and sediment control measures will conform with, or exceed, the relevant requirements and guidelines provided in the Department's publication <i>Urban Erosion and Sedimentation Handbook</i>, the EPA's publication <i>Pollution Control Manual for Urban Stormwater</i> and the Department of Housing's publication <i>Soil and Water Management for Urban Development</i>; iv. design specifications for diversionary works, banks and sediment basins; v. an erosion monitoring program during construction of the development; and vi. measures to address erosion, should it occur, and to rehabilitate/ stabilise disturbed areas of the site. <p>c. a Noise Management Plan to outline measures to minimise and mitigate noise impacts on surrounding land uses as a result of the construction of the development in association with the continued operations at the adjacent site. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of the potential sources of noise during the proposed works; ii. specification of the noise criteria for the proposed works; iii. a detailed description of what actions and measures would be implemented to ensure that these works would comply with the relevant noise criteria.; iv. a description of how the effectiveness of these actions and measures would be monitored during 				

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>the proposed works, clearly indicating who would conduct the monitoring, how often this monitoring would be conducted, how the results of this monitoring would be recorded; and, if any non-compliance is detected; and</p> <p>v. a description of what procedures would be followed to ensure compliance;</p> <p>d. 29a Transport Management Plan to detail measures to ensure road works and construction activities are undertaken in a manner that does not adversely impact on the performance and safety of the surrounding road network. The Plan shall meet Council and RTA requirements, and shall include, but not necessarily be limited to:</p> <p>i. details of construction and operation traffic volumes and peak delivery times;</p> <p>ii. measures to be implemented to adequately mitigate the impact on the performance and safety of the surrounding network during the relocation of the Sparke Street and Pacific Highway intersection;</p> <p>iii. 30measures to be implemented in accordance with condition 0, which shall include the installation of temporary physical barriers to prohibit right-hand turn movements out of Sparke Street; and</p>				

²⁹ Incorporates an RTA General Term of Approval (5)

³⁰ Incorporates an RTA General Term of Approval (4)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		iv. provide for the monitoring of the performance of the implemented measures; and v. details of any additional measures that would be implemented should any non-compliance be detected.				
Operation Environmental Management Plan						
90.	7.4	<p>The Applicant shall prepare and implement an Operation Environmental Management Plan to detail an environmental management framework, practices and procedures to be followed during the operation of the development. The Plan shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the development, including all consents, licences, approvals and consultations; ii. a description of the roles and responsibilities for all relevant employees involved in the operation of the development; iii. overall environmental policies and principles to be applied to the operation of the development; iv. standards and performance measures to be applied to the development, and a means by which environmental performance can be periodically reviewed and improved, where appropriate; v. management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent; 		<p>Operation Environmental Management Plan V3, 21/11/2019 available.</p> <p>The following deficiencies were identified:</p> <ul style="list-style-type: none"> • Do not identify all statutory and other obligations required to be fulfilled. • Responsibilities provided for Operations management, operations employees. Responsibilities have not been clearly assigned to individual roles. • Site roles have not been clearly identified; <p>Evidence was not provided to verify that the updated OEMP had been submitted to DPIE for approval.</p> <p>Recommendation:</p>	Non-Compliant	06

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>vi. the Management Plans listed under condition 0 of this consent; and</p> <p>vii. arrangements for community consultation and complaints handling procedures during construction.</p> <p>The Plan shall be submitted for the approval of the Director- General no later than one month prior to the commencement of operation of the development, or within such period otherwise agreed by the Director-General. Any stage of the operations shall not be commissioned until the Director-General has approved the OEMP covering the works undertaken in that stage. Upon receipt of the Director-General's approval, the Applicant shall supply a copy of the Plan to Council as soon as practicable.</p>		The OEMP should be updated to address the deficiencies identified and submitted to DPIE for approval.		
91.	7.5	<p>As part of the Operation Environmental Management Plan for the development, required under condition 0 of this consent, the Applicant shall prepare and implement the following Management Plans:</p> <p>a. a Noise Management Plan to outline measures to manage noise impacts associated with the operation of the development. The Plan shall include, but not necessarily be limited to:</p> <p>i. identification of the potential sources of noise during the site operations;</p> <p>ii. specification of the noise criteria for these operations;</p> <p>iii. a detailed description of what actions and measures would be implemented to ensure that operations would comply with specified noise criteria. This shall include measures to minimise</p>		<p>Appendix 7 - Noise Management Plan - compliant</p> <p>Appendix 3 – Transport Management Plan</p> <ul style="list-style-type: none"> Does not include a Transport Code of Conduct Does not include possibilities for reducing daily heavy vehicle movements during night-time periods or during morning peak periods. Does not include procedures to limit the tracking of mud/dirt on the roadway 	Non-Compliant	07

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>night-time emissions and stringent screening procedures to minimise the potential for overpressure events at the site; and</p> <p>iv. a description of how the effectiveness of actions and measures would be monitored over time; and if any non-compliance is detected what procedures would be followed to ensure compliance;</p> <p>b. a Transport Management Plan to outline measures to ensure minimal amenity impacts on the locality through the appropriate management of heavy vehicles accessing and departing the development. The Plan shall be prepared in consultation with Council and shall include, but not necessarily be limited to:</p> <p>i. details of the Transport Code of Conduct for the development that outlines the management of traffic impacts associated with heavy vehicles accessing and departing the site;</p> <p>ii. consideration of all possibilities for reducing the required daily heavy vehicle movements and movements during peak or night-time periods;</p> <p>iii. procedures to ensure the safe and efficient movement of vehicles between Lots 29-30 DP803794 and Lot 1 DP874409;</p> <p>iv. procedures to limit the tracking of mud/dirt on the roadway between Lots 29-30 DP803794 and Lot 1 DP874409;</p> <p>v. procedures for monitoring the effectiveness and suitability of these measures; and</p>		<p>Appendix 8 - Flood Emergency Management Plan</p> <ul style="list-style-type: none"> details of the workforce education awareness program implemented at the site; identification of the designated evacuation routes and flood refuges <p>Appendix 6 – Stormwater Management Plan</p> <ul style="list-style-type: none"> details of all relevant stormwater control infrastructure procedures for the installation and maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek; a demonstration of consistency with the stormwater management plan for the catchment and any relevant stormwater guidelines prepared by Council; details of the monitoring program, as required by condition 5.11, to monitor stormwater flows from the site; and 		

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>vi. details of additional measures that would be implemented should be non-compliance be detected.</p> <p>c. a Flood Emergency Management Plan to outline measures that would be implemented in a time of flood The Plan shall provide detailed evacuation procedures to interface with the Bureau of Meteorology's flood warning system and the local State Emergency Services plan (where appropriate) and to include provisions for any third parties likely to be involved. The Plan shall also include, but not necessarily be limited to:</p> <p>i. a detailed description of the likely flood behaviour of the area within the vicinity of the site;</p> <p>ii. identification of the flood warning systems that would be utilised by the proposed operations;</p> <p>iii. details of the workforce education awareness program implemented at the site;</p> <p>iv. details of the evacuation and evasion procedures that would be undertaken in a time of an emergency;</p> <p>v. identification of the designated evacuation routes and flood refuges; and</p> <p>vi. details of flood preparedness and awareness procedures for residents and visitors to the site.</p> <p>d. a Stormwater Management Plan to outline measures to mitigate impacts of stormwater run-off from and within the premises. This plan shall address the</p>		<p>Appendix 5 – Landscape Management Plan;</p> <ul style="list-style-type: none"> details of existing and proposed landscaping to be undertaken on the site with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, residential receptors and the railway line; details of landscape work to improve the condition of the riparian zone along the boundary of Lot 1 DP 874409 and Ironbark Creek; maximisation of flora species endemic to the locality in landscaping the site; measures to ensure general consistency with the relevant guidance provided in Planning for Bushfire Protection (NSW Rural Fire Service and Planning NSW, 2001); a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species; and a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain 		

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>requirements of Council and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. details of all relevant stormwater control infrastructure; ii. procedures for the installation and maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek; iii. a demonstration of consistency with the stormwater management plan for the catchment and any relevant stormwater guidelines prepared by Council; iv. details of the monitoring program, as required by condition 0, to monitor stormwater flows from the site; and v. details of any contingency measures that would be followed to ensure the protection of neighbouring waterways and wetlands should an accident or emergency occur at the site. <p>e. a Landscape Management Plan to outline measures to ensure appropriate development and maintenance of landscaping on the site. The Plan shall address the requirements of Council and shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> i. details of existing and proposed landscaping to be undertaken on the site with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, residential receptors and the railway line; 		<p>vehicle sight distances in accordance with RTA requirements</p> <p>Appendix 4 – Waste Management Plan</p> <ul style="list-style-type: none"> • a description of what procedures would be followed to ensure compliance if any non-compliance is detected. <p>Recommendation:</p> <p>Subplans required under the OEMP should be updated to ensure that they address all the requirements of Consent Condition 7.5.</p>		

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<ul style="list-style-type: none"> ii. details of landscape work to improve the condition of the riparian zone along the boundary of Lot 1 DP 874409 and Ironbark Creek; iii. maximisation of flora species endemic to the locality in landscaping the site; iv. measures to ensure general consistency with the relevant guidance provided in <i>Planning for Bushfire Protection</i> (NSW Rural Fire Service and Planning NSW, 2001); v. a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species; and vi. a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle sight distances in accordance with RTA requirements. a) a Waste Management Plan to outline measures to minimise the production and impact of wastes generated at the development. The Plan shall include, but not necessarily be limited to: <ul style="list-style-type: none"> i. identification of the types and quantities of waste that would be generated during operations, and the standards and performance measures for dealing with this waste; ii. ³¹a description of appropriate procedures that will be implemented to ensure that all scrap, dust and 				

³¹ Incorporates an EPA General Term of Approval (E1.3)

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>litter is contained within the designated receival and load out areas;</p> <p>iii. a detailed description of how this waste would be reused, recycled, and if necessary, appropriately treated and disposed of in accordance with the EPA's guidelines on the <i>Assessment, Classification & Management of Liquid and Non-Liquid Waste</i>;</p> <p>iv. a description of how the effectiveness of these actions and measures would be monitored over time; and</p> <p>v. a description of what procedures would be followed to ensure compliance if any non-compliance is detected.</p>				
ENVIRONMENTAL REPORTING						
Incident Reporting						
	8.1	The Applicant shall notify the Director-General of any incident with actual or potential significant off-site impacts on people or the biophysical environment as soon as practicable after the occurrence of the incident. The Applicant shall provide written details of the incident to the Director-General within seven days of the date on which the incident occurred.		No environmental incidents have been recorded	Not triggered	
	8.2	The Applicant shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this consent, reported in accordance with condition 0 of this consent, within such period as the Director-General may agree.		No environmental incidents have been recorded	Not triggered	

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
Annual Performance Reporting						
92.	8.3	<p>The Applicant shall, throughout the life of the development, prepare and submit for the approval of the Director-General, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the development against the Operation Environmental Management Plan (refer to condition 0 of this consent), the conditions of this consent and other licences and approvals relating to the development. The AEMR shall include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> a. details of compliance with the conditions of this consent; b. a comparison of the environmental impacts and performance of the development against the environmental impacts and performance predicted in those documents listed under condition 0 of this consent; c. details of any complaints received in relation to the operation, an overview of how these complaints were handled, and the results of any actions taken by the Applicant to address the complaint; d. results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person; and e. a list of all occasions in the preceding twelve-month period when environmental performance goals for the development have not been achieved, indicating 		<p>AEMR provided annually</p> <p>2017 AEMR submitted – Unable to be verified</p> <p>2018 AEMR submitted – 18/07/2019, 25/11/19 (revised).</p> <p>2019 AEMR submitted – Unable to be verified</p> <p>No evidence that the AEMR has been submitted to Council.</p> <p>Recommendations:</p> <p>A copy of the Annual Environmental Management Report should be provided to Council in accordance with the requirements of Consent condition 8.3. Records of submission of the Annual Environmental Management Report to DPIE and Council should be maintained.</p>	Non-Compliant	08

AQUAS Ref No	Condition of Consent No.	Requirement	Evidence Collected	Finding and Recommendations	Compliance rating	Issue #
		<p>the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident.</p> <p>The Applicant shall submit a copy of the AEMR to the Director-General and Council every year, with the first AEMR to be submitted no later than twelve months after the commencement of operation.</p>				

Audit Checklist – Environmental Protection Licence 5345

AQUAS Ref No	Cond. No.	Condition						Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
ENVIRONMENTAL PROTECTION LICENCE 5345											
93.	A.1.1	Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.							Reported that Scrap metal recycling was ~240,000T / year.	Compliant	
		Metallurgical activities	Metal waste generation	> 100 T annual volume of waste generated or stored							
		Metallurgical activities	Scrap metal processing	> 100000 - 500000 T annual production capacity							
		Waste storage	Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste	Any listed waste types stored							
94.	L1	Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.							No incidents have been recorded where pollution of waters has occurred.	Compliant	
95.	L2.1	For each monitoring/discharge point or utilisation area specified in the table/s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.						Annual Environmental Management Report 2017 Annual Environmental Management Report 2018 Annual Environmental Management Report 2019 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 1 2020 InfraBuild Recycling Hexham	Quarterly stack emission monitoring conducted. Results for period January 2017 – September 2020 reviewed. All results were less than maximum allowable discharge concentrations.	Compliant	
		Pollutant	Unit of Measure	100 percentile concentration limit	Reference conditions	Oxygen correction	Averaging period				
		Total Solid Particles	milligrams per cubic metre	100	Dry, 273K, 101.3 kPa		1 hour				
		Mercury	milligrams per cubic metre	1.0	Dry, 273K, 101.3 kPa		1 hour				

AQUAS Ref No	Cond. No.	Condition						Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
		Lead	milligrams per cubic metre	51.0	Dry, 273K, 101.3 kPa		1 hour	Quarterly Noise Monitoring Report - Quarter 2 2020 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 3 2020			
96.	L3	Waste The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled "Waste" and meeting the definition, if any, in the column titled "Description" in the table below. Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled "Activity" in the table below. Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled "Other Limits" in the table below. This condition does not limit any other conditions in this licence.							Reported that Scrap metal recycling was ~240,000T / year.	Compliant	
		Code	Waste	Description	Activity	Other limits					
		NA	Scrap Metal								
		NA	Scrap Metal			No more than 500000 Tonnes can be processed per year					
		J20	Waste oil/hydrocarbons mixtures/emulsions in water								
		D220	Lead; lead compounds								

AQUAS Ref No	Cond. No.	Condition					Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
97.	L4	Noise limits Noise from the premises must not exceed the limits specified in the table below					Annual Environmental Management Report 2017 Annual Environmental Management Report 2018 Annual Environmental Management Report 2019 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 1 2020 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 2 2020 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 3 2020	Noise exceedance identified during monitoring conducted 4 th quarter 2019. 2020 Q2 – Day Noise levels not compliant. Evening and night measured noise levels were below criteria	Non-compliant	NC-04
		Location	Day LAeq(15 minute)	Evening LAeq (15 minute)	Night LAeq(15 minute)	Night LA1(1 minute)				
		Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55				
		St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56				
		Any operating industrial premises affected by noise from the premises	70	70	70	N/A				
98.	L5	Hours of operation The shredder must only be operated between the hours of 0700 and 1800 Monday to Saturday, and at no time on Sundays and Public Holidays, except, where the following requirements are complied with the shredder may be operated between the hours of 1800 and 2200, Monday to Friday: a) an unplanned and unforeseeable situation arises at the premises by which the operation of the NSW remelt steel industry is at risk of being negatively impacted by a shortage of shredded scrap, and b) the licensee informs the EPA Hunter Office, and all affected noise receptors within a 1.5Km radius of the LYNX shredder, in writing at least 24 hours prior to commencing out of hours operation, and					Shredder running sheet	The shredder was reported to operate 7.00am to 3.00pm daily. The shredder may operate up to 6.00pm during periods of high demand.	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
		c) an officer appointed by the licensee is on site, solely for the purpose of ensuring compliance with noise limits at various locations.				
99.	L6	Potentially offensive odour No condition of this licence identifies a potentially offensive odour for the purposes of section 129 of the Protection of the Environment Operations Act 1997.	Complaints Register 2019	One complaint received 20/05/19 in relation to offensive odour. Response provided to EPA.	Compliant	
100.	O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	Site Inspection Maintenance records, e.g. Order 30076188 – Baghouse Filter Inspection, Quarterly. Completed 18/08/2020 Order 30037873 – Rotor Inspection – Daily. Completed 13/11/2020	Requirements for the minimisation of environmental impacts of the site activities identified in management plans have been implemented.	Compliant	
101.	O2.1	All plant and equipment installed at the premises or used in connection with the licensed activity: a) must be maintained in a proper and efficient condition; and b) must be operated in a proper and efficient manner.		Records of maintenance of plant and equipment verified	Compliant	
102.	O3.1	The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.	Site Inspection Stormwater Quality Improvement Device Clean Report – Jul-20 – Urban Asset Solutions	Dust suppression activities are undertaken to minimise dust levels. These include: <ul style="list-style-type: none"> Water trucks: spraying water across the plant area to minimise dust levels; Sweepers – Dust sweepers utilized across the site; Dust suppression unit – installed within the shredder unit to minimize dust 	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
				emission from the shredder operation. <ul style="list-style-type: none"> Water sprays on conveyors. Landscaping of open areas. 		
103.	O3.2	All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.	Site Inspection	Dust suppression activities are undertaken to minimise dust levels. These include: <ul style="list-style-type: none"> Water trucks: spraying water across the plant area to minimise dust levels; Sweepers – Dust sweepers utilized across the site; Dust suppression unit – installed within the shredder unit to minimize dust emission from the shredder operation. Water sprays on conveyors. Landscaping of open areas. 	Compliant	
104.	O3.3	Trucks entering and leaving the premises that are carrying loads of dust generating materials must have their loads covered at all times, except during loading and unloading.	Site Inspection	During the site inspection, no trucks were sighted with uncovered loads.	Compliant	
105.	O4.1	Emergency response O4.1 The licensee must maintain, and implement as necessary, a current emergency response plan for the premises. The licensee must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the	HEX-OHSE-RM-PR0-601 Pollution Incident Response Management Plan V.2 10/08/2020	PIRMP developed for the site.	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
		premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the licence, the licensee must develop an emergency response plan within three months of that date.				
106.	O5.1	Where practicable, the licensee must implement appropriate procedures to ensure that all scrap, dust and litter is contained within the designated receiving and load out areas.	Site Inspection	Dedicated bunkers provided for segregation of scrap. Fencing with shade cloth to prevent offsite migration of litter. Landscaping of site to minimise dust generation and litter dispersion.	Compliant	
107.	O5.2	All above ground tanks containing material that is likely to cause environmental harm must be bunded or have an alternative spill containment system in place.	Site Inspection	All above ground tanks sighted during the site inspection had been suitably bunded. It was noted that a new bunded facility had been provided for the storage and dispensing of oils.	Compliant	
108.	O5.3	Bunds must: a) have walls and floors constructed of impervious materials; b) be of sufficient capacity to contain 110% of the volume of the tank (or 110% volume of the largest tank where a group of tanks are installed); c) have floors graded to a collection sump; and d) not have a drain valve incorporated in the bund structure, or be constructed and operated in a manner that achieves the same environmental outcome.	Site Inspection	All above ground tanks sighted during the site inspection had been suitably bunded.	Compliant	
109.	O6.1	Waste management The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines as in force from time to time	Waste Classification Letter - Stockpiled Material - InfraBuild Recycling Hexham - Lot 1,	Waste Management Plan developed and included in Appendix 4 of the OEMP. Waste storage	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
			DP110576, AECOM 8/11/2019	facilities had been provided. Sighted waste classification for waste crushed concrete stored on site.		
110.	O6.2	The licensee must ensure that waste identified for recycling is stored separately from other waste.	Site Inspection	Facility for the segregation of waste was available and utilised. E.g. Dedicated storage area for used batteries.	Compliant	
111.	O7.1	Other operating conditions All process related fabric filters installed on the premises shall be fitted with a bag leak detection and alarm system	Site Inspection	Verified during site inspection	Compliant	
112.	O7.2	There must be no incineration or open burning of any material(s) on the premises, except as specifically authorised by the EPA.		Reported that no incineration or open burning of materials had occurred on site.	Compliant	
113.	O7.3	The licensee must ensure that activities undertaken at the premises do not cause visible emissions of smoke or fume beyond the boundary of the premises.	Site Inspection	The plant is operated to minimise emissions. No visible emissions of dust or fume were sighted during the site inspection.	Compliant	
114.	O7.4	The licensee must ensure that activities are conducted in an environmentally satisfactory manner. So as to minimise and prevent the pollution of air and water the licensee must: (a) Ensure that vehicles or containers prior to leaving the premises are clean and sealed in a manner that will not cause materials or wastes used in conducting the activities at the premises to be tracked, thrown from, blown, fall, or cast from any vehicle or container onto a public road. (b) The licensee must have in place and implement procedures to ensure that vehicles and containers exiting the premises are in a condition to ensure that materials are not tracked, thrown, blown, fall or cast onto a public road	Site Inspection Hexham Driver Induction	Driver induction includes requirements for inspecting trucks and covering loads before leaving the site.	Compliant	

AQUAS Ref No	Cond. No.	Condition				Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #	
115.	M1.2	All records required to be kept by this licence must be: a) in a legible form, or in a form that can readily be reduced to a legible form; b) kept for at least 4 years after the monitoring or event to which they relate took place; and c) Produced in a legible form to any authorised officer of the EPA who asks to see them.					Records were readily available on site in hard copy and/or electronic format.	Compliant		
116.	M1.3	The following records must be kept in respect of any samples required to be collected for the purposes of this licence: a) the date(s) on which the sample was taken; b) the time(s) at which the sample was collected; c) the point at which the sample was taken; and d) the name of the person who collected the sample.				1st Quarter Emissions Testing Report 2020 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 1 2020	Records of monitoring were readily available on site in hard copy and/or electronic format. Records include required information.	Compliant		
117.	M2.2	Point 1				1st Quarter Emissions Testing Report 2020	Quarterly emissions testing undertaken by AECOM, which includes monitoring for the pollutants identified.	Compliant		
		Pollutant	Unit of Measure	Frequency	Sampling Method					
		Lead	Mg/m³	Quarterly	TM-12					
		Mercury	Mg/m³	Quarterly	TM-14					
		PM10	µg/m³	Quarterly	OM-5					
		Total Solid Particles	Mg/m³	Quarterly	TM-15					
118.	M4.1	Suitable instrumentation must be maintained and operated to monitor (by sampling and obtaining results by analysis) the parameters specified in Column 1. The licensee must use the sampling method, units or measure, averaging period and sample at the frequency, specified opposite in the other columns				Site Inspection	Weather station maintained in north-west corner of site.	Compliant		
		Parameter	Unit of Measure	Frequency	Averaging Period					Sampling Method
		Rainfall	Mm	Daily	1 hour					AM-4

AQUAS Ref No	Cond. No.	Condition					Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
		Wind Speed @ 10 Metres	m/s	Continuous	15 minute	AM-2 & AM-4				
		Wind Direction @ 10 metres	Degrees	Continuous	15 minute	AM-2 & AM-4				
		Temperature @ 10 metres	Degrees Celsius	Continuous	15 minute	AM-4				
		Temperature @ 2 metres	Degrees Celsius	Continuous	15 minute	AM-4				
		Sigma theta @ 10 metres	Degrees	Continuous	15 minute	AM-2 & AM-4				
119.	M5.1	The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.					Complaints Register 2017 Complaints Register 2018 Complaints Register 2019 Complaints Register 2020	Complaints register maintained. 2017 – No complaints received. 2018 – No complaints received. 2019 – 4 complaints received. 2020 – No complaints received.	Compliant	
120.	M5.2	The record must include details of the following: a) the date and time of the complaint; b) the method by which the complaint was made; c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect; d) the nature of the complaint; e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and f) if no action was taken by the licensee, the reasons why no action was taken.					Complaints Register 2017 Complaints Register 2018 Complaints Register 2019 Complaints Register 2020	Complaints register includes information required.	Compliant	
121.	M5.3	The record of a complaint must be kept for at least 4 years after the complaint was made.						Records were readily available on site.	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
122.	M5.4	The record must be produced to any authorised officer of the EPA who asks to see them.		Records were readily available on site.	Compliant	
123.	M6.1	The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.		A contact phone number is provided the OneSteel web site. Other contact details including an email address are provided on the internet site.	Compliant	
124.	M6.2	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.		The InfraBuild website lists the contact number for the site - 02 4961 9700 which is the Hexham reception and operates during business hours.	Non-Compliant	09
125.	M6.3	The preceding two conditions do not apply until 3 months after the date of the issue of this licence.			Not Triggered	
126.	M6.4	The licensee must nominate to the EPA a representative of the company that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their telephone number, must be current at all times. The nomination and contact details must be provided to the EPA's Regional Manager- Hunter at PO Box 488G, Newcastle NSW 2300. Note: This condition does not apply until two (2) weeks after the date of issue of the variation notice to include this condition.		EPA Contact - Paul Smith No official correspondence to the EPA for change to Paul Smith.	Non-Compliant	05
127.	M7.1	Suitable instrumentation must be maintained and operated, in compliance with Australian Standard 2187.2 of 1993, to monitor overpressure and vibration caused by explosions on the premises.	Annual Environmental Management Report 2017 Annual Environmental Management Report 2018 Annual Environmental Management Report 2019	Overpressure and vibration monitoring instruments have been installed permanently at the site and monitoring is conducted by consultants. No blasts have been measured during the	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
				period covered by the current audit. No complaints have been received in relation to excessive overpressure or vibration.		
128.	M7.2	The licensee is required to monitor noise emissions from the premises on a quarterly basis, to demonstrate compliance with the noise limits in Condition L4.1 of this licence. The licensee must engage a suitably qualified and experienced acoustic consultant to undertake the noise compliance assessments.	InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 1 2020 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 2 2020 InfraBuild Recycling Hexham Quarterly Noise Monitoring Report - Quarter 3 2020	Quarterly monitoring was performed by AECOM in quarters 1,2,3 and 4 of each year.	Compliant	
Reporting Conditions						
Annual Return Documents						
129.	R1.1	The licensee must complete and supply to the EPA an Annual Return in the approved form comprising: 1. a Statement of Compliance, 2. a Monitoring and Complaints Summary, 3. a Statement of Compliance - Licence Conditions, 4. a Statement of Compliance - Load based Fee, 5. a Statement of Compliance - Requirement to Prepare Pollution Incident Response Management Plan, 6. a Statement of Compliance - Requirement to Publish Pollution Monitoring Data; and 7. a Statement of Compliance - Environmental Management Systems and Practices. At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.	2020 Annual Return EPA 5345	Annual return completed using EPA provided template.	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
130.	R1.2	An Annual Return must be prepared in respect of each reporting period, except as provided below. <i>Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.</i> <i>The reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 months</i>	https://apps.epa.nsw.gov.au/prpoeoapp/Detail.aspx?instid=5345&id=5345&option=licence&searchrange=licence&range=POEO%20licence&prp=no&status=Issued	Annual return completed using EPA provided template. EPA Public register shows annual returns had been submitted in accordance with licence requirements.	Compliant	
131.	R1.3	Where this licence is transferred from the licensee to a new licensee: a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period. <i>Note: An application to transfer a licence must be made in the approved form for this purpose.</i>		Licence has not been transferred	Not triggered	
132.	R1.4	Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on: a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.		Licence has not been surrendered	Not triggered	
133.	R1.5	The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').		Required to be submitted by 16 February. 2019 submitted 7/02/20 2018 submitted 14/02/19 2017 submitted 15/02/18	Compliant	
134.	R1.6	The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA	2020 Annual Return EPA 5345	Copy of annual returns available on site.	Compliant	
135.	R1.7	Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:	2020 Annual Return EPA 5345	Annual Return signed by Operational Support	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
		a) the licence holder; or b) by a person approved in writing by the EPA to sign on behalf of the licence holder.		Manager and NSW State Manager.		
136.	R2.1	Notifications must be made by telephoning the Environment Line service on 131 555. <i>Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.</i>		No notifications have been required.	Not triggered	
137.	R2.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.		No notifications have been required.	Not triggered	
138.	R3.1	Where an authorised officer of the EPA suspects on reasonable grounds that: a) where this licence applies to premises, an event has occurred at the premises; or b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence, and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.	Show Cause Letter – EPA Ref 1598478, 14/08/2020	EPA inspection 23 June 2020 observed deficiencies in the management of water discharge and dust emission controls. Show cause notice issued 14/08/2020. Infrabuild response 4/09/2020 and 6/10/2020 identifying actions undertaken to address dust emission issues.	Compliant	
139.	R3.2	The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.		Show cause notice required response by 4 September 2020. Response provided 4 September 2020.	Compliant	
140.	R3.3	The request may require a report which includes any or all of the following information: a) the cause, time and duration of the event; b) the type, volume and concentration of every pollutant discharged as a result of the event;		Written response provided to EPA within timeframe specified in the show cause notice.	Compliant	

AQUAS Ref No	Cond. No.	Condition	Evidence Collected	Finding and Recommendations	Compliance rating	Assessment Issue #
		<p>c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;</p> <p>d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;</p> <p>e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;</p> <p>f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and</p> <p>g) any other relevant matters.</p>				
141.	R3.4	The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.		Additional information provided 6/10/2020.	Compliant	
142.	R3.5	The licensee is required to supply a report to be submitted with the annual return, regarding the quarterly noise compliance assessments referred to in Condition M7.2 of this licence.		Noise reports provided with annual return. Verified by Operations Support Manager.	Compliant	
143.	G1.1	A copy of this licence must be kept at the premises to which the licence applies.		Copy of licence maintained on site.	Compliant	
144.	G1.2	The licence must be produced to any authorised officer of the EPA who asks to see it.		Copy of licence maintained on site.	Compliant	
145.	G1.3	The licence must be available for inspection by any employee or agent of the licensee working at the premises.		Copy of licence maintained on site.	Compliant	

Appendix F. Audit Photos



Photo 1 – New bunded facility for storage and dispensing of oils.



Photo 2 – Oil containers in bunded container.



Photo 3 – Storage container for use batteries.



Photo 4 – Chemical containers not stored in a bunded area..



Photo 5 – Weather station and Blast and vibration monitor



Photo 6 – Dust deposition gauge



Photo 7 – Stormwater collection system – Gross pollutant trap.



Photo 8 – Stormwater water channel beside rail corridor with sediment controls.



Photo 9. Car parking facilities had been provided.



Entry/ exit to Pacific Highway



Photo 11. Water cart used for dust suppression.

Appendix G. Consultation Records

From: [Hart, James](#)
To: Karen.GALLAGHER@epa.nsw.gov.au
Subject: Infrabuild Independent Environmental Audit
Date: Wednesday, 18 November 2020 3:00:58 PM

Hi Karen,

Thanks for taking the time to talk to me today regarding the Independent Environmental Audit of the Infrabuild Recycling Facility at Hexham.

To summarise our discussion, you have suggested that I consider the Pollution Studies and Reduction Program requirements as identified in the EPL in relation to surface water and air quality management.

I trust this provides a reasonable summary of our discussion.

Please do not hesitate to contact me if you would like to discuss further.

Regards

[James Hart](#) | Management Consultant

Certified Exemplar Global Lead OHS Auditor

Certified Exemplar Global Lead Environmental Auditor

Certified Exemplar Global Lead Quality Management System Auditor

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Please consider the environment before printing this email.

From: Joel Curran
To: Hart, James
Subject: RE: Infrabuild IEA Audit 19 November 2020
Date: Wednesday, 18 November 2020 12:02:59 PM

Afternoon James

Based on previous IEA and site inspections, I would like to see a focus on an assessment of the adequacy and potential improvements for:

Dust management – hardstand areas and crusher facility;

Sediment tracking; and

Surface water management.

If you haven't already, it would be good to see if the EPA has any comments.

Regards

Joel Curran

Senior Compliance Officer

Compliance | Department of Planning, Industry and Environment

T 02 4904 2702 | M 0412 323 331 | E joel.curran@planning.nsw.gov.au

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Please direct all email correspondence to compliance@planning.nsw.gov.au

www.dpie.nsw.gov.au

The Department of Planning, Industry and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

If you are submitting a compliance document or request as required under the conditions of consent or approval, please note that the Department is no longer accepting lodgement via compliance@planning.nsw.gov.au.

The Department has recently upgraded the Major Projects Website to improve the timeliness and transparency of its post approval and compliance functions. As part of this upgrade, proponents are now requested to submit all post approval and compliance documents online, via the Major Projects Website. To do this, please refer to the instructions available [here](#).

Appendix E

Corrective Action Plan

Corrective Action Plan - Infrabuild Recycling Hexham - Updated 22 April 2021

Issue No.	Condition	Requirement	Issue sighted	Auditor Recommendation	Proposed Corrective Action	Target Date	Status	Completion Date	Actions Achieved																													
NC-01	1.2 & 2.5	<p>1.2 The Applicant shall carry out the development generally in accordance with:</p> <p>a) Development Application No. 345-7-2003-i, lodged with the Department of Infrastructure, Planning and Natural Resources on 25 July 2003, as amended by:</p> <p>i) MOD-32-3-2004-i, in relation to modification of the consent to require the construction of an acoustic barrier, the conditional restriction of activities and deliveries at the site and a requirement to establish a Community Consultative Committee;</p> <p>ii) MOD-37-3-2004-i, in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to enable the staged commencement of construction works;</p> <p>iii) MOD-45-4-2004-i in relation to modification of the consent with respect to the timing of approvals for certain pre-construction compliance reports to enable the commencement of construction works, and to provide for an alternative U-Turn facility;</p> <p>iv) MOD-111-11-2004-i, in relation to modification of the development consent with respect to altering the timing for the completion of roadworks;</p> <p>v) MOD-49-3-2005-i, in relation to modification of the consent with respect to removing the requirement to provide an acoustic barrier at St Josephs Catholic Care for the Aged facility;</p> <p>b) Metal Shredding Facility at Hexham – Environmental Impact Statement (Volumes 1, 2 and 3), prepared by SMEC Australia Ltd and dated July 2003;</p> <p>2.5 The Applicant shall meet the requirements of the Director-General in respect of the implementation of any measure necessary to ensure compliance with the conditions of this consent, and general consistency with the documents listed under condition 1.2 of this consent. The Director-General may direct that such a measure be implemented in response to the information contained within any report, plan, correspondence or other document submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.</p>	Non-compliances have been identified as a result of the current Independent Environmental Audit.	Infrabuild should ensure that appropriate processes are developed and implemented to ensure compliance with the requirements of the conditions of consent.	General provision which will be resolved on closing out all corrective actions in this Plan	30-Jun-21	Closed	22-Apr-21	All non-compliances identified in the AEMR have been addressed in the table below.																													
NC-02	4.3	<p>Operation Noise</p> <p>4.3 The Applicant shall design, construct, operate and maintain the development to ensure that noise generated during the operation of the development does not exceed the noise limits specified in Table 2, at those locations and during those periods indicated. The maximum allowable noise contributions apply under:</p> <p>a) wind speeds up to 3 ms-1 (measured at 10 metres above ground level); and</p> <p>b) temperature inversion conditions up to 3oC per 100 metres.</p> <p>Table 2 - Operation Noise Limits</p> <table><tr><th rowspan="2">Location</th><th>Day</th><th>Evening</th><th colspan="2">Night</th></tr><tr><th>7.00am to 6.00pm Monday to Saturday 10.00am to 6.00pm Sundays and Public Holidays</th><th>6.00pm to 10.00pm on any day</th><th>10.00pm to 6.00am Monday to Saturday 10.00pm to 6.00am Sundays and Public Holidays</th><th></th></tr><tr><th></th><th>L_{Aeq}(15 minute)</th><th>L_{Aeq}(15 minute)</th><th>L_{Aeq}(15 minute)</th><th>L_{A10}(1 minute)</th></tr><tr><td>Any residence in Shamrock Street, Hexham, affected by noise from the premises</td><td>47</td><td>48</td><td>45</td><td>55</td></tr><tr><td>St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises</td><td>53</td><td>42</td><td>41</td><td>56</td></tr><tr><td>Any operating industrial premises affected by noise from the premises</td><td>70</td><td>70</td><td>70</td><td>N/A</td></tr></table>	Location	Day	Evening	Night		7.00am to 6.00pm Monday to Saturday 10.00am to 6.00pm Sundays and Public Holidays	6.00pm to 10.00pm on any day	10.00pm to 6.00am Monday to Saturday 10.00pm to 6.00am Sundays and Public Holidays			L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A10} (1 minute)	Any residence in Shamrock Street, Hexham, affected by noise from the premises	47	48	45	55	St Joseph's Retirement Village and any associated residence in Old Maitland Road, Hexham, affected by noise from the premises	53	42	41	56	Any operating industrial premises affected by noise from the premises	70	70	70	N/A	Quarterly noise monitoring conducted for the project reported exceedances of site-specific noise criteria in Quarter 2 of 2020.	It is recommended that Infrabuild review noise monitoring data to determine the cause of the exceedances identified to determine if the exceedances are the result of onsite activities. Where the cause of the exceedances is determined to be on site activities, these activities should be modified to reduce the noise impact and surrounding receivers.	Forward communication to monitoring company (AECOM) to clarify whether exceedances occurred during Q2.	30-Mar-21	Closed	05-Feb-21	AECOM have provided a detailed response to the comments provided by the auditor and that, in their view, the recorded levels were compliant with Industrial Noise Policy (email from Cye Buckland, 5 February 2021).
Location	Day	Evening		Night																																		
	7.00am to 6.00pm Monday to Saturday 10.00am to 6.00pm Sundays and Public Holidays	6.00pm to 10.00pm on any day	10.00pm to 6.00am Monday to Saturday 10.00pm to 6.00am Sundays and Public Holidays																																			
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NC-03	4.8E	<p>4.8E The Applicant shall install noise monitoring equipment at the St Josephs Catholic Care of the Aged facility, in consultation with the owners of that property, and to the satisfaction of the Director-General. The Applicant shall operate the noise monitoring equipment on an on-going basis, as may be agreed with the St Josephs Catholic Care of the Aged facility, to monitor noise impacts from the development on that property. All monitoring data shall be made available to the St Josephs Catholic Care of the Aged facility. The Applicant may only cease noise monitoring in accordance with this condition, after having consulted with the St Josephs Catholic Care of the Aged facility, and only with the agreement of the Director-General.</p>	Noise monitoring equipment has not been installed at St Joseph's Catholic Care of the Aged facility to monitor noise on an on-going basis. Quarterly monitoring conducted by AECOM. No record was available to show that changes to the requirement for continuous noise monitoring had been approved by DPIE.	It is recommended that Infrabuild undertake an investigation to determine if the current monitoring program has been approved by DPIE. If no approval has been provided, then Infrabuild should implement noise monitoring in compliance with Condition 4.8E or seek agreement from St Joseph's Catholic Care of the Aged facility, and the Director-General for a modification the requirement for continuous noise monitoring.	Re-install continuous noise monitor at St Joseph's Catholic Care	30-Mar-21	Closed	02-Mar-21	Texcel replacement of existing battery powered noise monitor with solar powered unit storing data to cloud. Branch manager has access to noise data. (email P.Smith 2 March 2021)																													
NC-04	4.46	<p>4.46 All chemicals, fuels and oils shall be stored in appropriately bunded areas, with impervious flooring and sufficient capacity to contain 110% of the largest container stored within the bund. Bunds shall be designed and installed in accordance the requirements of the EPA's Environmental Protection Manual Technical Bulletin Bunding and Spill Management.</p>	During the site inspection, it was found that chemical containers had not always been stored in bunded areas.	All chemicals containers should be stored in bunded areas which comply with the requirements of the EPA's Environmental Protection Manual Technical Bulletin Bunding and Spill Management.	Obtain copy of EPAs Technical Manual to be held by the site. Review compliance with the manual.	30-Mar-21	Closed	15-Feb-21	Review of EPA Technical Manual for site compliance completed. Copy of the Technical Manual stored on Hexham local drive. (email P. Smith 15 Feb 2021)																													

Issue No.	Condition	Requirement	Issue sighted	Auditor Recommendation	Proposed Corrective Action	Target Date	Status	Completion Date	Actions Achieved
NC-05	7.1	<p>7.1 Prior to the commencement of construction of the development, the Applicant shall nominate a suitably qualified and experienced Environmental Representative(s). The Applicant shall employ the Environmental Representative(s) on a full-time basis during the construction, commissioning and operation of the development. The Environmental Representative shall be:</p> <p>a) the primary contact point in relation to the environmental performance of the development;</p> <p>b) responsible for all Management Plans and Monitoring Programs required under this consent;</p> <p>c) responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development;</p> <p>d) responsible for receiving and responding to complaints in accordance with condition 6.2 and condition 6.3 of this consent; and</p> <p>e) given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.</p> <p>The Applicant shall notify the Director-General of the name and contact details of the Environmental Representative upon appointment, and any changes to that appointment that may occur from time to time.</p>	New site manager who is the environmental representative. Evidence that the EPA and DPIE had been formally advised of the change to the ER was not available.	Infrabuild should formally notify DPIE and the EPA of changes to the appointment of the environmental representative, including provision of their name and contact details.	Amend OEMP to include requirement for notification of EPA.	01-May-21	Closed	22-Apr-21	OEMP has been amended to require notification of EPA. (refer section 14.5 pg 14)
NC-06	7.4	<p>7.4 The Applicant shall prepare and implement an Operation Environmental Management Plan to detail an environmental management framework, practices and procedures to be followed during the operation of the development. The Plan shall include, but not necessarily be limited to:</p> <p>i) identification of all statutory and other obligations that the Applicant is required to fulfil in relation to operation of the development, including all consents, licences, approvals and consultations;</p> <p>ii) a description of the roles and responsibilities for all relevant employees involved in the operation of the development;</p> <p>iii) overall environmental policies and principles to be applied to the operation of the development;</p> <p>iv) standards and performance measures to be applied to the development, and a means by which environmental performance can be periodically reviewed and improved, where appropriate;</p> <p>v) management policies to ensure that environmental performance goals are met and to comply with the conditions of this consent;</p> <p>vi) the Management Plans listed under condition 7.5 of this consent; and</p> <p>vii) arrangements for community consultation and complaints handling procedures during construction.</p>	<p>The following deficiencies were identified in the OEMP:</p> <ul style="list-style-type: none"> Does not identify all statutory and other obligations required to be fulfilled. Responsibilities provided for Operations management, operations employees. Responsibilities have not been clearly assigned to individual roles. Site roles have not been clearly identified. 	The OEMP should be updated to address the deficiencies identified and submitted to DPIE for approval.	<p>Amend OEMP to include clear identification of:</p> <ul style="list-style-type: none"> current statutory and other obligations required to be fulfilled. responsibilities provided for operations management and operations employees [currently not clearly assigned to individual roles]. site roles. 	01-May-21	Closed	22-Apr-21	OEMP has been amended to include: - updated statutory obligation list (section 4.1 pg 4) - responsibilities of operations management and operations employees (section 6 pg 6 updated to provide clear linkage and relationship with Recycling WHSE Management System, Procedure 001, Responsibilities, Authorities and Accountability Procedure)
		7.5 As part of the Operation Environmental Management Plan for the development, required under condition 7.4 of this consent, the Applicant shall prepare and implement the following Management Plans:	Subplans required under the OEMP do not included all information as required by Condition 7.5.	Subplans required under the OEMP should be updated to ensure that they address all the requirements of Consent Condition 7.5.	Update Site Plans [details below]	01-May-21	Closed	22-Apr-21	Refer specific amendments to subplans below.
		<p>a) a Noise Management Plan to outline measures to manage noise impacts associated with the operation of the development. The Plan shall include, but not necessarily be limited to:</p> <p>i) identification of the potential sources of noise during the site operations;</p> <p>ii) specification of the noise criteria for these operations;</p> <p>iii) a detailed description of what actions and measures would be implemented to ensure that operations would comply with specified noise criteria. This shall include measures to minimise night-time emissions and stringent screening procedures to minimise the potential for overpressure events at the site; and</p>	No comment by auditor.	No comment by auditor.	No change	-	-	-	-
		<p>b) a Transport Management Plan to outline measures to ensure minimal amenity impacts on the locality through the appropriate management of heavy vehicles accessing and departing the development. The Plan shall be prepared in consultation with Council and shall include, but not necessarily be limited to:</p> <p>i) details of the Transport Code of Conduct for the development that outlines the management of traffic impacts associated with heavy vehicles accessing and departing the site;</p> <p>ii) consideration of all possibilities for reducing the required daily heavy vehicle movements and movements during peak or night-time periods;</p> <p>iii) procedures to ensure the safe and efficient movement of vehicles between Lots 29-30 DP803794 and Lot 1 DP874409;</p> <p>iv) procedures to limit the tracking of mud/dirt on the road way between Lots 29-30 DP803794 and Lot 1 DP874409;</p> <p>v) procedures for monitoring the effectiveness and suitability of these measures; and</p> <p>vi) details of additional measures that would be implemented should be non-compliance be detected.</p>	<p>Appendix 3 – Transport Management Plan</p> <ul style="list-style-type: none"> Does not include a Transport Code of Conduct Does not include possibilities for reducing daily heavy vehicle movements during night-time periods or during morning peak periods. Does not include procedures to limit the tracking of mud/dirt on the roadway 	No comment by auditor.	<p>Update the Transport Management Plan to include:</p> <ul style="list-style-type: none"> Transport Code of Conduct [reframing of the current sign-off document used by drivers] methods for reducing daily heavy vehicle movements during night-time periods or during morning peak periods. procedures to limit the tracking of mud/dirt on the roadway 	01-May-21	Closed	22-Apr-21	The Transport Management Plan has been repaced by the Hexham-specific transport managment plan Hexham Traffic Management Plan (HEX-OPS-PC-SOP-602) and associated Driver Induction Requirements (“Do’s and Don’ts”) addresses the requirements of Consent Condition 7.5b (Transport Management). This removes duplication and specifically addresses auditor requirements for: - a Transport Code of Conduct - the Driver Induction Requirements specifically addresses these requirements - reducing heavy vehicle movements during peak periods - the Traffic Management Plan specifically addresses this requirement - reducing tracking of mud/dirt on the roadway - the Traffic Management Plan specifically addresses this requirement

Issue No.	Condition	Requirement	Issue sighted	Auditor Recommendation	Proposed Corrective Action	Target Date	Status	Completion Date	Actions Achieved
NC-07	7.5	c) a Flood Emergency Management Plan to outline measures that would be implemented in a time of flood. The Plan shall provide detailed evacuation procedures to interface with the Bureau of Meteorology's flood warning system and the local State Emergency Services plan (where appropriate) and to include provisions for any third parties likely to be involved. The Plan shall also include, but not necessarily be limited to: i) a detailed description of the likely flood behaviour of the area within the vicinity of the site; ii) identification of the flood warning systems that would be utilised by the proposed operations; iii) details of the workforce education awareness program implemented at the site; iv) details of the evacuation and evasion procedures that would be undertaken in a time of an emergency; v) identification of the designated evacuation routes and flood refuges; and vi) details of flood preparedness and awareness procedures for residents and visitors to the site.	Appendix 8 - Flood Emergency Management Plan • details of the workforce education awareness program implemented at the site; • identification of the designated evacuation routes and flood refuges	No comment by auditor.	Update the Flood Emergency Management Plan to include: • linkages to the workforce education awareness program implemented at the site; • identification of the designated evacuation routes and flood refuges [as required]	01-May-21	Closed	22-Apr-21	The Flood Emergency Management Plan (Appendix 8) has been replaced by the Hexham-specific Emergency Response Plan (HEX-OHSE-RM-TOOL-601). This removes duplication and specifically addresses auditor requirements for: - details of the workforce education awareness program implemented at the site; - identification of the designated evacuation routes and flood refuges. The Emergency Response Plan also contains the contact details of key personnel on and off site in one location and can be updated as required by site operations.
		d) a Stormwater Management Plan to outline measures to mitigate impacts of stormwater run-off from and within the premises. This plan shall address the requirements of Council and shall include, but not necessarily be limited to: i) details of all relevant stormwater control infrastructure; ii) procedures for the installation and maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek; iii) a demonstration of consistency with the stormwater management plan for the catchment and any relevant stormwater guidelines prepared by Council; iv) details of the monitoring program, as required by condition 5.11, to monitor stormwater flows from the site; and v) details of any contingency measures that would be followed to ensure the protection of neighbouring waterways and wetlands should an accident or emergency occur at the site.	Appendix 6 – Stormwater Management Plan • details of all relevant stormwater control infrastructure • procedures for the installation and maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek; • a demonstration of consistency with the stormwater management plan for the catchment and any relevant stormwater guidelines prepared by Council; • details of the monitoring program, as required by condition 5.11, to monitor stormwater flows from the site; and	No comment by auditor.	Update the site Stormwater Management Plan to include: • details of all relevant stormwater control infrastructure • procedures for the maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek. The revised Stormwater Management Plan must demonstrate a consistency for its catchment size and any relevant stormwater guidelines prepared by Council. It must also have details of the monitoring program, as required by condition 5.11, to monitor stormwater flows from the site.	01-May-21	Closed	22-Apr-21	Section 10.5 (Stormwater Quality Monitoring) has been updated to reference the AECOM-prepared Surface Water Mitigation and Monitoring Plan. This plan includes: • current relevant stormwater control infrastructure; • procedures for the maintenance of gross pollutant traps to screen stormwater from the site at all major site discharge points to Ironbark Creek. The AECOM report also includes: - a site water balance documenting the site catchment size; - details of the monitoring program to monitor stormwater flows from the site.
		e) a Landscape Management Plan to outline measures to ensure appropriate development and maintenance of landscaping on the site. The Plan shall address the requirements of Council and shall include, but not necessarily be limited to: i) details of existing and proposed landscaping to be undertaken on the site with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, residential receptors and the railway line; ii) details of landscape works to improve the condition of the riparian zone along the boundary of Lot 1 DP 874409 and Ironbark Creek; iii) maximisation of flora species endemic to the locality in landscaping the site; iv) measures to ensure general consistency with the relevant guidance provided in Planning for Bushfire Protection (NSW Rural Fire Service and PlanningNSW, 2001); v) a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species; and vi) a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle sight distances in accordance with RTA requirements.	Appendix 5 – Landscape Management Plan; • details of existing and proposed landscaping to be undertaken on the site with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, residential receptors and the railway line; • details of landscape works to improve the condition of the riparian zone along the boundary of Lot 1 DP 874409 and Ironbark Creek; • maximisation of flora species endemic to the locality in landscaping the site; • measures to ensure general consistency with the relevant guidance provided in Planning for Bushfire Protection (NSW Rural Fire Service and Planning NSW, 2001); • a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species; and • a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle sight distances in accordance with RTA requirements	No comment by auditor.	Amend the Landscape Management Plan to include: • details of existing landscaping with specific reference to the use of vegetation to screen the development from the Pacific Highway, Ironbark Creek, residential receptors and the railway line; • details of landscape works to improve the condition of the riparian zone along the boundary with Ironbark Creek; • maximisation of flora species endemic to the locality in landscaping the site; • measures to ensure general consistency with the relevant guidance provided in Planning for Bushfire Protection (NSW Rural Fire Service and Planning NSW, 2001); • a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species. • a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle	01-May-21	Closed	22-Apr-21	The Landscape Management Plan (Appendix 3) has been updated to incorporate: • details of existing landscaping (the approved works are included in the Appendix); • measures to ensure general consistency with the relevant guidance provided in Planning for Bushfire Protection; • a program to ensure that all landscaped areas on the site are maintained in a tidy, healthy state and free of weed species. • a program to ensure that vegetation along the Pacific Highway is appropriately managed to maintain vehicle sight distances in accordance with RTA requirements.

Issue No.	Condition	Requirement	Issue sighted	Auditor Recommendation	Proposed Corrective Action	Target Date	Status	Completion Date	Actions Achieved
		<p>f) a Waste Management Plan to outline measures to minimise the production and impact of wastes generated at the development. The Plan shall include, but not necessarily be limited to:</p> <p>i) identification of the types and quantities of waste that would be generated during operations, and the standards and performance measures for dealing with this waste;</p> <p>ii) a description of appropriate procedures that will be implemented to ensure that all scrap, dust and litter is contained within the designated receival and load out areas;</p> <p>iii) a detailed description of how this waste would be reused, recycled, and if necessary, appropriately treated and disposed of in accordance with the EPA's guidelines on the Assessment, Classification & Management of Liquid and Non-Liquid Waste;</p> <p>iv) a description of how the effectiveness of these actions and measures would be monitored over time; and</p> <p>v) a description of what procedures would be followed to ensure compliance if any non-compliance is detected.</p>	<p>Appendix 4 – Waste Management Plan</p> <ul style="list-style-type: none"> a description of what procedures would be followed to ensure compliance if any non-compliance is detected. 	No comment by auditor.	Amend the Waste Management Plan to clarify what should occur if any non-compliances are found	01-May-21	Closed	22-Apr-21	The Waste Management Plan (now Appendix 2) has been updated to include a section on control measures for ensuring compliance.
NC-08	8.3	<p>Annual Performance Reporting</p> <p>8.3 The Applicant shall, throughout the life of the development, prepare and submit for the approval of the Director-General, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the development against the Operation Environmental Management Plan (refer to condition 7.4 of this consent), the conditions of this consent and other licences and approvals relating to the development. The AEMR shall include, but not necessarily be limited to:</p> <p>a) details of compliance with the conditions of this consent;</p> <p>b) a comparison of the environmental impacts and performance of the development against the environmental impacts and performance predicted in those documents listed under condition 1.2 of this consent;</p> <p>c) details of any complaints received in relation to the operation, an overview of how these complaints were handled, and the results of any actions taken by the Applicant to address the complaint;</p> <p>d) results of all environmental monitoring required under this consent and other approvals, including interpretations and discussion by a suitably qualified person; and</p> <p>e) a list of all occasions in the preceding twelve-month period when environmental performance goals for the development have not been achieved, indicating the reason for failure to meet the goals and the action taken to prevent recurrence of that type of incident.</p> <p>The Applicant shall submit a copy of the AEMR to the Director-General and Council every year, with the first AEMR to be submitted no later than twelve months after the commencement of operation.</p>	No evidence was sighted to demonstrate that the Annual Environmental Management Report was submitted to Council every year.	A copy of the Annual Environmental Management Report should be provided to Council in accordance with the requirements of Consent condition 8.3. Records of submission of the Annual Environmental Management Report to DPIE and Council should be maintained.	Future copies of the AEMR will be provided to Council and a record of its submission will be retained. This requirement will be updated in the OEMP.	01-May-21	Closed	23-Mar-21	AEMR has been submitted to Council. Confirmation of receipt of AEMR from Newcastle City Council on 23 March 2021.
NC-09	EPL M6.4	The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.	The InfraBuild website lists the contact number for the site - 02 4961 9700 which is the Hexham reception and operates during business hours. However, this number is not clearly identified as the complaints line	The complaints line should be clearly identified and communicated to the public. Consider updating the website to clearly identify that the telephone number provided is the complaints line.	Amend the OEMP and website to ensure consistency in relation to the complaints line.	30-Mar-21	Closed	22-Apr-21	OEMP has been updated to confirm the use of a 24-hour telephone number (02 4961 9700) for community complaints, consistent with the InfraBuild website details.
NC-10	EPL M6.4	The licensee must nominate to the EPA a representative of the company that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their telephone number, must be current at all times. The nomination and contact details must be provided to the EPA's Regional Manager- Hunter at PO Box 488G, Newcastle NSW 2300. Note: This condition does not apply until two (2) weeks after the date of issue of the variation notice to include this condition.	Where there was a change to the nominated representative, records were not available to show that the name and contact details of the new representative had been provided to the EPA.	Records should be maintained to verify that, when there is a change to the nominated representative, the names and contact details of new representative are provided to the EPA.	The OEMP will be amended to ensure that any change to the environmental representative is notified to the NSW EPA.	30-Mar-21	Closed	22-Apr-21	Section 14.5 has been included in the OEMP requiring notification of the NSW EPA of any change in environmental representative. The identity of the environmental representative is recorded in the Hexham-specific Emergency Response Plan (HEX-OHSE-RM-TOOL-601)

Appendix F

Air Quality Management Plan (AQMP)

3 December 2021

Peter Jamieson
Unit Head Regulatory Operations Metropolitan North
Environment Protection Authority
Email: RegOps.MetroRegulation@epa.nsw.gov.au
cc: Emily.Rindfleish@epa.nsw.gov.au

Dear Mr Jamieson

Environment Protection Licence 5345 – Air Quality Management Plan (AQMP)

Condition U3.1 of our licence requires that an Air Quality Management Plan be prepared and submitted to the EPA. The AQMP must address the following:

U3.1 The licensee must prepare an Air Quality Management Plan (AQMP). The AQMP must include, at a minimum:

1. Identification of key dust sources;
2. Identification of relevant control strategies for key dust sources;
3. Identification of dust monitoring procedures for the Premises including an assessment of the current dust deposition monitoring locations and identification of additional dust deposition monitoring locations where required;
4. An Action Plan for the implementation of dust mitigation measures as identified in the Dust Mitigation Study Report (AECOM, 2019), including a proposed timetable for the implementation of each mitigation measure;
5. Operating procedures for weather conditions prone to high dust generation;
6. A schedule for site inspections undertaken by on-site personal to monitor dust; and
7. Identification of training requirements for on-site personal for best practice dust mitigation.

The AQMP must be emailed to the EPA at RegOps.MetroRegulation@epa.nsw.gov.au by no later than 13 December 2021.

This AQMP builds upon the Hexham Dust Mitigation Report submitted to the EPA on 30 January 2020 which outlined key dust control mitigation measures undertaken by the business at that time. InfraBuild has continued to treat dust control as a top priority for its operations and has applied significant capital towards additional concreting, fencing/screening and ongoing monitoring.

The success of the actions contained in the Dust Mitigation Report is evidenced by the ongoing improvement shown in the monthly dust monitoring evidenced by the recent diagram below prepared by AECOM. InfraBuild recognises, however, that it must continue to improve on its dust management performance.

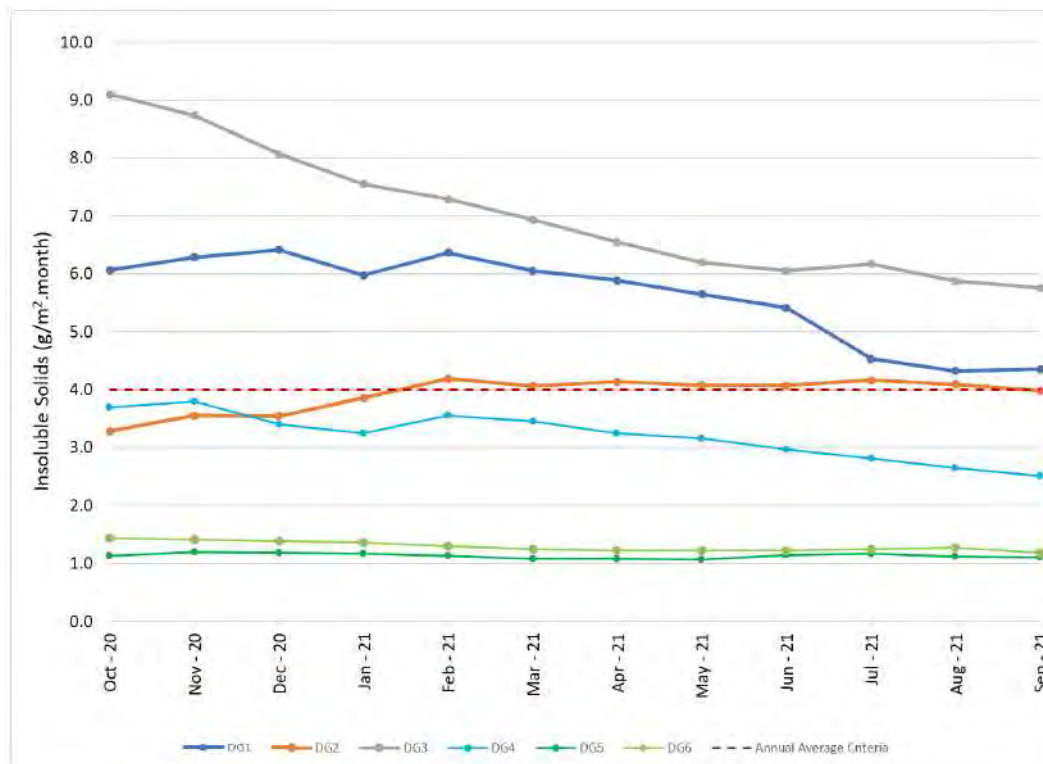


Figure 3 Insoluble Solids Rolling Average Plot

Please accept this submission in fulfillment of condition U3.1 of EPL 5345. If you have any questions regarding this submission, please contact me on 0408 328 471 or Gregor Riese on 0400457926.

Yours sincerely

LESLEY HARPENG

Environment and Systems Manager



InfraBuild

AIR QUALITY MANAGEMENT PLAN

Hexham



Sparke Street, Hexham

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Executive Summary

Condition U3.1 of Licence 5345 requires that an Air Quality Management Plan be prepared and submitted to the EPA. The AQMP must address the following:

License Obligation: Condition U3.1 of EPL 5345

U3.1 The licensee must prepare an Air Quality Management Plan (AQMP). The AQMP must include, at a minimum:

1. Identification of key dust sources;
2. Identification of relevant control strategies for key dust sources;
3. Identification of dust monitoring procedures for the Premises including an assessment of the current dust deposition monitoring locations and identification of additional dust deposition monitoring locations where required;
4. An Action Plan for the implementation of dust mitigation measures as identified in the Dust Mitigation Study Report (AECOM, 2019), including a proposed timetable for the implementation of each mitigation measure;
5. Operating procedures for weather conditions prone to high dust generation;
6. A schedule for site inspections undertaken by on-site personal to monitor dust; and
7. Identification of training requirements for on-site personal for best practice dust mitigation.

The AQMP must be emailed to the EPA at RegOps.MetroRegulation@epa.nsw.gov.au by no later than 13 December 2021.

1 Identification of key dust sources

The AECOM report catalogued three main potential sources of dust:

1.1 Process Related Dust Sources

The following sources attributed to scrap handling and processing have been identified:

- Unloading (primarily tipping) of scrap material upon delivery to Site
- Handling of scrap material by material handlers with hydraulic finger picks including:
 - Sorting scrap material
 - Manipulating scrap material (e.g. preparing vehicles for processing)
 - Moving scrap material in preparation for loading into the shredder
 - Loading scrap material onto the shredder infeed conveyor
- Mobile shearing of large items large items by excavator within the HM Yard and shredder site

- Oxy-Acetylene cutting of large items within the HM Yard
- Operation of the shredder – generating a combination of steam, fumes and dust
- Conveyors open to atmosphere
- Fugitive dust from semi enclosed areas (e.g. picking stations)
- Transfer and drop points including:
 - Conveyor transfer points
 - Rotating magnetic drums
 - Product and floc material dropping to stockpiles or storage bays

1.2 Vehicle & Mobile Plant Dust Sources

- Wheel generated dust sources including:
 - Trucks delivering and removing material from Site
 - Smaller vehicles delivering scrap to Site
 - Wheel loaders & Fork Lifts
- Wheel loaders handling material (scrap, product and waste including dirt)
- Particulate emissions from diesel internal combustion engines

1.3 Fugitive Dust Sources

- The following fugitive sources were identified:
 - Unpaved surfaces – primarily in the HM yard
 - Dirt and other impurities laying on hardstand and roadways
 - Stockpiles – including:
 - Unprocessed scrap material
 - Processed ferrous product
 - Floc/waste material
 - Other product stored bays/stockpiles on both the ferrous and non-ferrous Sites

Source: AECOM (2019) pg 9.

1.4 Ranking of dust sources

The subsequent AECOM emissions inventory attempted to rank the dust sources and ranked them as follows:

Dust Generating Activity	Emission Value	Units	% of Total
Truck Haulage Emissions	21,033	kg/year	33
Transfer Point Emissions	15,410	kg/year	24
Crushing Mill	14,872	kg/year	23
Wind Erosion	10,757	kg/year	17
Stack Emissions	1,026	kg/year	2
Small Vehicle Emissions	817	kg/year	1
Total Site Emissions	63,915	kg/year	-

Source: AECOM (2019) pg 16.

2 Identification of relevant control strategies for key dust sources

The AECOM report (2019) identified and ranked several dust control strategies ranked in the table below. AECOM emphasis in their report that *“It needs to be considered that this scoring system is subjective and has simply been used to assist in ranking the mitigation options. It does not provide any quantitative assessment of the feasibility of the options.”* InfraBuild has taken on all reasonable and practical measures to date in limiting dust generation on site (refer Action Plan in Section 4) and has applied many of the proposed mitigation options identified by AECOM.

Table 10: Evaluation of Mitigation Options (Source: pg 26 AECOM 2019)

Mitigation Option	NPI Control Factor (%)	Source Effectiveness Rating (1 - 3)	Practicality Rating (1 - 3)	Overall Site Effectiveness (Multiplier) (1 – 3)	Feasibility Score (3 – 30)
Reduce the amount of impurities in the scrap being delivered to Site	-	2	3	5	25
Increase frequency and number of existing dust deposition monitoring locations	-	2	3	4	20
Consideration of additional dust deposition monitoring locations	-	2	3	4	20
Road sweeping in combination with water cart (to limit airborne dust generated by the sweeper)	75	3	3	3	18
Reactive mitigation measures during conditions prone to high dust generation	-	2	2	4	16
Improved general house-keeping	-	2	3	3	15
Formalise dust management procedures and activities into the Air Quality Management Plan (AQMP)	-	2	3	3	15 ¹
Increased Site inspections & audits	-	2	3	3	15
Education and training for staff around best practices and minimising dust emissions	-	2	3	3	15
Enclosure of oxy-acetylene cutting activities (with exhaust filtering)	-	3	2	3	15
Specialised fencing to reduce the windspeed in critical areas of the Site	30	2	2	3	12
Enclosure of product bays	70 ²	2	2	3	12
Stabilisation of unsealed areas	40	2	3	2	10
Enclosure of conveyors	70	2	1	3	9
Enclosure of drop points (e.g. magnetic drums, conveyor transfer points)	70 ²	2	1	3	9

3 Identification of dust monitoring procedures for the Premises

InfraBuild has organized independent dust monitoring of the operations on a quarterly basis for several years on a due-diligence basis (this has not been a requirement of the EPA license). In early 2020 following a complaint from an adjoining owner, InfraBuild increased the frequency of this monitoring to monthly. These reports are prepared by AECOM and reviewed by InfraBuild management. Dust deposition results are reported in the following form.

Table 1 Dust Deposition Results – September 2021

Gauge	Insoluble Matter (g/m ² .month)	Ash Content		Combustible Matter (g/m ² .month)	Annual Average Insoluble Matter (g/m ² .month)
		(g/m ² .month)	% of Insoluble Matter		
DG1	3.3	2.5	76	0.8	4.4
DG2	3.6	2.7	75	0.9	4.0
DG3	8.9	7.1	80	1.8	5.8
DG4	2.3	2.0	87	0.3	2.4
DG5	1.0	0.8	80	0.2	1.1
DG6	1.0	0.9	90	0.1	1.2

Bold denotes value above EPL Guideline.

Monitoring locations have been selected on the basis of accessibility and the location of sensitive receptors (see figure).



Figure 1 InfraBuild Recycling Dust Deposition Gauge Sampling Locations

4 An Action Plan for the implementation of dust mitigation measures

The Hexham Dust Mitigation Report (HDMR 2020) was submitted to the EPA on 30 January 2020 and outlined the key dust control mitigation measures undertaken by the business at that time. This table has been updated based on progress made since early 2020.

Table 1 –Dust Mitigation Action Plan, InfraBuild Recycling, Hexham

Dust Mitigation Actions	InfraBuild Status	Delivery
1. Reduce the amount of impurities in the scrap being delivered to Site (AECOM Dust Study Recommendation)	Continued enforcement of existing company policies to limit acceptance of loose non metallics.	Ongoing enforcement by InfraBuild
2. Increase frequency and number of existing dust deposition monitoring location & consideration of additional dust deposition monitoring locations (AECOM Dust Study Recommendation)	Dust deposition monitoring is now occurring near residences near Shamrock St and is done monthly by AECOM.	Ongoing Dust monitoring by AECOM

3. Road sweeping in combination with water cart to limit airborne dust generated by the sweeper (AECOM Dust Study Recommendation)	Use of contract sweeper and purchase of new water cart.	Ongoing use by InfraBuild
4. Reactive mitigation measures during conditions prone to high dust generation (AECOM Dust Study Recommendation)	This specific action duplicates proposed actions which are responsive to climatic conditions.	Ongoing responsibility of InfraBuild. Refer Actions 3, 5 and 10
5. Improved general house-keeping (AECOM Dust Study Recommendation)	General dust management measures as outlined in the Operational Environmental Management Plan	Ongoing responsibility of InfraBuild
6. Tree planting (InfraBuild initiative)	Installation of 266 semi-advance native evergreen species on northern and eastern boundary	Completed
7. Concrete hardstand in non-ferrous and HM yard	Installation of an additional 3,100 sqm of hardstand to reduce dust emissions	Completed
8. Ongoing community engagement with local community	Continued consultation with the local community on site operations	Ongoing
9. Online reporting of environmental performance	Continued reporting of dust, noise, and environmental monitoring results	Ongoing
10. Dust suppression measures on metal shredder mill	Installation of new dust and smoke control measures on the shredder mill including continued use of the Dust-Buster product (or equivalent) as part of shredder operations.	Ongoing
11. Concreting to improve surface around mill in the shredder yard	Reduce dust generation and allowing efficient cleaning/improved drainage	Completed
12. Covering of conveyor belts to reduce dust emissions	Installation of new conveyor covers on the C5 conveyor	Expected to be completed by end 2021

13. Upgrade of water spray systems	Maintenance of existing water spray systems on drum magnets 1 and 2	Ongoing.
14. Installation of windsock	Wind direction/speed indicator to assist site operations	Completed
15. Installation of dust mitigation fencing	Dust fence installed at eastern boundary of shredder yard in 2021	Completed

5 Operating procedures for weather conditions prone to high dust generation

Hexham has a Dust Management Plan which identifies key sources and pathways for dust, and the nearest sensitive receptors to the site. Prevailing wind conditions are identified and mitigations measures for normal operations and high risk days are outlined. A copy of the Dust Management Plan can be downloaded from the Dropbox link below.

6 A schedule for site inspections undertaken by on-site personal to monitor dust

Independent consultants AECOM is accompanied by InfraBuild personnel during the installation and retrieval of the dust collection cartridges during routine dust monitoring. The daily site checklist includes ensuring the Dust Buster liquid used in the shredding process to limit dust emissions is maintained. All loads delivered to the site are inspected for excessive non-metal materials and deductions applied to deliveries as per the company policy outlined in the Unacceptable Scrap Manual.

7 Identification of training requirements for on-site personal

Training of personnel is undertaken in two tranches:

- Environmental Awareness – All Employees
- Introduction to Environment Management System and Manual – Supervisors and above

The first document is a basic induction for all employees of the key environmental aspects and impacts associated with a metal recycling yard operation. The second document is an introduction to the company-wide environment management system and manual for senior personal.

A copy of the both documents Plan can be downloaded from the Dropbox link below.

REFERENCES CITED

<https://www.dropbox.com/sh/jjp9q8y0r9ppf03/AADu8m1vibEwlfw0sPMVGdw5a?dl=0>

AECOM (2019). Dust Mitigation Study, InfraBuild Recycling, Hexham. 30 August 2019

InfraBuild (2020). Hexham Dust Mitigation Report Revised. 30 January 2020

InfraBuild (2021). Hexham Recycling Dust Management Plan. 30 November 2021

InfraBuild Recycling Environmental Awareness – All Employees

InfraBuild Recycling Introduction to Environment Management System and Manual – Supervisors and above

Appendix G

Surface Water Mitigation and Monitoring Plan

Surface Water Mitigation and Monitoring Plan

Surface Water Mitigation and Monitoring Plan

Client: InfraBuild Recycling

ABN: 28 002 707 262

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Quality Information

Document Surface Water Mitigation and Monitoring Plan

Ref 60607793-SWMM-REP

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Prepared by Kelly Mulhearn

Reviewed by Greg Matthews

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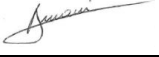
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			Name/Position	Signature
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B	23-Apr-2020	Addressing Client Comments	Tama Armani Project Manager	
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1.0 Introduction

1.1 Site overview

InfraBuild Recycling – Hexham engaged AECOM for the provision of environmental and engineering services for their metal recycling facility located at 14 Sparke Street, Hexham, New South Wales (herein referred to as 'the Site').

As part of the broader scope of works the following investigations and reports have been produced and the initial report was reliant on the findings of these documents:

- AECOM (2019a) Water Balance Model
- AECOM (2019b) Surface Water Sampling Plan
- AECOM (2019c) Phase 1 Investigation
- AECOM (2020a) Discharge Impact Assessment
- AECOM (2020b) Discharge Characterisation.

The Site is legally identified as Lot 1 on Deposited Plan (DP) 1176316 and covers an area of approximately 7.5 ha (Figure 1). The Site comprises two functioning areas with the ferrous recycling facility to the north of an internal roadway and the non ferrous facility (including offices and workshop) to the south. The Site is bounded to the south by Ironbark Creek a tributary of the Hunter River located 1 km to the east of the Site. The Site is bounded to the west by a railway line and the north and east by open flat uninhabited lots.

The Site is licensed to receive up to 500,000 tonnes of scrap metal per year with the main operational process comprising of sorting and shredding metals (ferrous and non ferrous) prior to being sent off-site for further processing.

Response from the NSW Environmental Protection Authority (EPA) letter dated 8 July 2020 (EPA Ref: DOC20/552758), requested clarification on a few key items regarding the Surface Water Mitigation and Monitoring Plan under Recommendations of Section U10 of the letter:

U.10 – Surface Water Mitigation and Monitoring Plan

Recommendations

The EPA supports the proposal for improved storage capability for non-ferrous facility first flush system and measures to capture sediment for offsite disposal. However, it is not clear if these measures are adequate to achieve the relevant guideline performance discussed above or adequately manage sediment, nutrient and contaminant risks.

Mixing zones should only be used after all practical measure to control pollutants at source or on-site are implemented and mixing zones are not suited to the management of nutrients, bio-accumulatory or particulate substances.

Licence condition U1.10 Surface Water Mitigation and Monitoring Plan states:

The Licensee must prepare a Surface Water Mitigation and Monitoring Plan. The Surface Water Mitigation and Monitoring Plan must include, as a minimum, the following components:

- *An investigation of all practical and reasonable measures that could be taken to avoid or minimise pollution based on the discharge characterisation and discharge impact assessment. Consideration must include, but be not limited to:*
 - *measures to control or contain pollutants at the source on the Premises (i.e. avoiding the generation of contaminated water or reducing the volume of contaminated water run-off*
 - *sediment and erosion controls.*

It is therefore recommended that the mitigation and monitoring plan is revised to develop mitigation measures that:

- *provide an equivalent environmental outcome to the minimum design criteria for erosion and sediment control measures set out in Managing Urban Stormwater: Soils and Construction, Volume 2E: Mines and Quarries, based on a standard receiving environment for operations greater than 3 years*
- *provide improved at-source controls to prevent or reduce sediment, nutrient and toxicants from entering stormwater runoff.*

It is also recommended that the proposed 3-year timeframe for mitigation measures should be reconsidered given the high frequency of managed overflows from the site with elevated sediment, nutrient and other pollutants.

Monitoring

It is recommended that monitoring conditions are included on the licence to:

- *measure the effectiveness of mitigation measures and inform potential licence limits that could be required for any residual non-trivial impacts*
- *sample all points of discharge from the premises during all discharge events (subject to the timing of when mitigation measures will be implemented). The aim would be to provide representative sampling before and after mitigation measures. Monitoring analytes should include at a minimum:*
 - *Hydrocarbon analytes (polycyclic aromatic hydrocarbons and total residual hydrocarbons)*
 - *Glycols*
 - *Total suspended solids*
 - *Nutrients (total nitrogen, total phosphorus, nitrite, nitrate and kjeldahl nitrogen)*
 - *Dissolved metals (aluminium, arsenic, boron, cadmium, chromium (VI), copper, iron, lead, manganese, mercury, molybdenum, nickel and zinc).*

The monitoring conditions could be reviewed subject to monitoring results 6 months after each mitigation measure is implemented.

InfraBuild is required to propose a surface water monitoring program to be included as conditions on the Licence.

1.2 Scope and objectives

The Site is subject to an Environment Protection Licence No. 5345 (EPL No. 5345 issued under the Protection of the Environment Operations Act, 1997 (POEO Act)). Recent correspondence from NSW Environmental Protection Agency (EPA) advised InfraBuild Recycling of a 'Notice of variation of EPL No. 5345'.

AECOM understand that InfraBuild Recycling are required, under a new condition of EPL to prepare a Surface Water Mitigation and Monitoring Plan (SWMP).

The objective of the SWMP is to provide a framework which describes how InfraBuild will assess, manage, monitor and mitigate surface water related impacts associated with Site activities on the regional receiving surface water environment. As outlined under condition U1.10 of the EPL, the SWMP must include, as a minimum, the following components:

- **Item 1:** an investigation of all practical and reasonable measures that could be taken to avoid or minimise pollution based on the discharge characterisation and discharge impact assessment. Consideration must include, but be not limited to:
 - measures to control or contain pollutants at the source on the Premises (i.e. avoiding the generation of contaminated water or reducing the volume of contaminated water run-off)
 - sediment and erosion controls

- contaminated water capture and storage requirements; and/or
- options for the treatment of unavoidable discharges of contaminated water from the Premises to meet specific water quality requirements.
- **Item 2:** demonstration of how your water storage and stormwater management infrastructures are (or will be) designed and operated to:
 - protect the NSW water quality objectives (WQOs) for receiving waters where they are currently being achieved; or
 - contribute towards achievement of the WQO's over time where they are not currently being achieved.
- **Item 3:** development of a program of preferred mitigation measures with proposed timeframes for implementation.
- **Item 4:** justification for rejecting any practical and reasonable measures assessed.
- **Item 5:** Where discharges from the Premises are unavoidable, establish an ongoing discharge monitoring program to validate outcomes of the proposed mitigation measures. The program must include at a minimum:
 - monitoring of rainfall
 - identification of pollutants to be monitored based on the discharge characterisation, discharge impact assessment and proposed mitigation measures
 - monitoring of discharge frequency and volumes
 - location of monitoring points
 - frequency of monitoring
 - method of monitoring
 - performance criteria
 - proposed actions and mitigation measures for managing pollutants, volume or frequency exceedances.



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AECOM

REGIONAL CONTEXT

(April 2020)

FIGURE 1

1.3 Guidelines

The SWMP has been prepared and in general accordance with the following guidance documents:

- Managing Urban Stormwater: Soils and Construction (4th Edition, Landcom (2004))
- Managing Urban Stormwater: Soils and Construction Volume 2E:Mines and Quarries (2008) Hunter River Water Quality and River Flow Objectives (DECCW (2006)).

2.0 Regulatory requirements

2.1 Legislation

Infrabuild Hexham has an obligation to ensure that current site activities comply with all applicable regulatory requirements. Legislation relevant to surface water management at Infrabuild Hexham includes:

- Environmental and Planning Assessment Act 1979 (NSW) (E&P Act)
- Protection of the Environment Operations Act 1997 (NSW) (POEO Act)
- Water Management Act 2000 (NSW) (WM Act).

2.2 Environmental Protection Licence (EPL)

An EPL is required for InfraBuild Recycling - Hexham due to it being classified as a Scheduled Activity for metallurgical activities, resource recovery and waste storage, under Schedule 1 of the POEO Act. Condition L1.1 of EPL No. 5345, provides a number of conditions relevant to surface water management at the Site.

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the POEO Act. In accordance with the POEO Act, 'waters' are defined as the whole or part of:

- Any river, stream, lake, lagoon, swamp, wetlands, unconfined surface water, natural or artificial watercourse, dam or tidal waters (including the sea); or
- Any water stored in artificial works, any water in water mains, water pipes or water channels, or any underground or artesian water.

Section 120 of the POEO Act states that it is illegal to pollute waters. Under the POEO Act, "water pollution" includes introducing litter, sediment, oil, grease, wash water, debris and flammable liquids such as paint into waters or placing such material where it is likely to be washed down or blown into waters or the stormwater system or percolate into groundwater".

3.0 Background

3.1 Soils and geology

The Newcastle 1:250 000 geological map sheet (NSW Geological Survey, Department of Mines, 1966) indicates that the Site is underlain by a regional geology of Quaternary alluvial deposits of gravel, sand, silt and clays. The surface soil landscapes are likely to comprise disturbed terrain and Millers forest estuarine soils. There is likely inclusion of soils derived from the Hexham Swamp.

The Site and the 500m search radius area are noted as being within a state planning policy acid sulfate soil trigger area. Newcastle Local Environmental Plan (LEP) 2012 identifies the Site to be predominately classified as “Class 3” potential for containing acid sulfate soils, which advises that works more than 1 metre below natural ground surface and works by which the water table is likely to be lowered more than 1 metre below natural ground surface may present an environmental risk. Ironbark Creek immediately to the south off-Site, and the Hunter River to the east off-Site are identified as “Class 1” suggesting any disturbance works may present an environmental risk to these water bodies.

3.2 Hydrogeology and registered groundwater bores

The soil landscape sheet of Newcastle 1:250 000 geological map sheet (NSW Geological Survey, Department of Mines, 1966) indicated alluvial sediments with permanently high water tables and low bearing strength saturated soils associated with the Site.

A search of the NSW Department of Primary Industries Office of Water identified two groundwater bores within a 500m radius of the Site. One additional bore was identified within 1km of the Site. Table 1 below lists details of the groundwater bores identified.

Table 1 Registered Bore Search

Bore ID	Distance and Direction	Bore Depth	Purpose	Water Level
GW202175	On-Site	4.0 mbgl	Private Monitoring Bore	1.9 mbgl
GW202176	On-Site	4.0 mbgl	Private Monitoring Bore	1.7 mbgl
GW202885	999m South	5.0 mbgl	Private Monitoring Bore	2.32 mbgl

Notes: mbgl = metres below ground level

Given the water level beneath Site, and proximity of the Site to the nearest bodies of water (i.e. Ironbark Creek and the Hunter River (300m north)), Hunter River South arm (430m east) and Hexham Swamp to the west) and the elevation of the Site (<5 m Australian Height Datum (AHD)) groundwater is likely to be relatively shallow (<2 mbgl), and has the potential to be tidally influenced by the Hunter River.

Based on the shallow nature of the groundwater at the Site, there it is likely to be in hydraulic continuity (i.e. baseflow contribution) between the Site and Ironbark Creek.

3.3 Existing surface water management systems and practices

3.3.1 Current site activities and layout

Current operations at the site have remain largely unchanged since 2005 (the site has been used as a scrap metal recycling facility since 1982) which includes the purchase, sorting and on-selling of scrap metals to metal foundries and exporters. Scrap metal transported to the site is typically sourced from private, commercial and industrial waste streams. Scrap metal is then divided into ferrous metals (e.g. iron and steel) and non ferrous metals (e.g. copper, zinc and brass).

Plant and machinery are used at InfraBuild Recycling to separate and process scrap metal into different grades and sizes. The layout of the site is divided into the following activity areas refer Figure 2:

- Shredder yard – Ferrous Side (northern side of Sparke Street)
 - Receival, sorting and bay areas (uncovered hardstand)
 - Stockpiling and processing areas (part hardstand and part unsurfaced)
 - Hammer Hill
- Non-Ferrous Facility (southern side of Sparke Street)
 - Entry, carpark and weighbridge (uncovered hardstand)
 - Sorting building and storage areas (covered hardstand)
 - Administration buildings.

3.3.2 Current site drainage

The Site is situated within the Ironbark Creek Catchment, with stormwater generated at the site discharging to Ironbark Creek which confluent with the Hunter River approximately 1km downstream of the Site. A detailed description of the Ironbark Creek and Hunter River is provided below.

3.3.2.1 Hydrological Setting

The Site discharge excess stormwater into Ironbark Creek to the south which is a tributary of the South Channel Hunter River located approximately 600m to the east of the Site. A detailed description of those surface water bodies has been provided in Section 2.2.1 and 2.2.2 of the Discharge Characterisation report (AECOM, 2020).



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AECOM

Legend

- Catchment Area
- Contours - 2m
- Indicative Stormwater alignment
- * Indicative swale alignment
- ➡ Overland flow
- Railway
- Site Boundary
- Buildings
- Weighbridge

0 40 80 Meters

Site features and catchment areas

(April 2020)

Figure 2

3.3.2.2 Site Drainage

The water generated on site is spit into five catchments as depicted in Table 2 and Figure 2.

Table 2 Catchment areas

Catchment #	Name	Area	Description
1	Buffer Land	1.08ha	Area immediately north of shredder yard that is vegetated and is not captured.
2	Shredder Yard	2.56hA	Northern and Central portion of site north of Spark Street
3	Sparke Street	1.94ha	An area that reports to the Sediment trap on Spark Street
4	Oxy-Cut	0.69ha	An area in the south western portion of the non-ferrous facility where the oxyacetylene cutting area upon which runoff generated discharges directly to Ironbark Creek. Run-off direction was confirmed based on site inspection completed as part of the water balance modelling work.
5	Non-Ferrous Facility Sump	1.13ha	Area of non-ferrous facility outside of the south western portion

Shredder Yard

Run-off from Catchment 2 is collected by the first flush pit. The first flush pit has a capacity of approximately 1,120 m³ (20 m (width), 20 m (length), 2.8 m (depth)). If operated at a level 400 mm above the bottom of the pit (i.e. available capacity = 960 m³). The equates to the storage of the runoff volume generated from the catchment for a 10year Annual Exceedance Probability (AEP) 25min storm event.

This portion of the Site is relatively flat, typically between 2-4 m AHD. The contributing catchment is predominately covered in concrete hardstand of varying condition which supports the processing plant and related infrastructure. The Hammer Mill (shredder) is located in the central portion of the Site which feeds into the discharge conveyor and is categorised by size, and material into ferrous and non ferrous by physical screening, magnets and optical sorting.

Stormwater generated on the shredder yard passes through gross pollutant traps prior to entering the shredder yard sump. Water collected in the sump is used daily in the Hammer Mill for cooling purposes (prior to passing through an oily water separator) where it is lost to the atmosphere as steam. If there is insufficient water in the First Flush Pit, it is augmented from mains potable water supply.

The sump is not enclosed and therefore loses water to evaporation. During times of heavy rainfall, surface water from the shredder yard sump passes through a second gross pollutant trap before discharging to Ironbark Creek via a vegetated swale and pipe network located along the western boundary of the Site (Figure 2). This discharge event only occurs when the capacity of the shredder yard sump is greater than 600m³ of the possible 1120m³ of storage.

Internal Road Pit

Catchment 3 contributes stormwater runoff to the sediment trap located on the south western end of Spark street. The sediment trap is a concrete lined pit with a storage capacity of approximately 150 m³. The area is predominately asphalt and contains general parking, the weigh bridge, the administration building and amenities building.

The pit was designed to capture the first flush volume based on 10 mm runoff, by previous calculations approximately 153.6 m³. The sediment basin was designed to retain 84 % of particles greater than 80 microns with average particle relative density of 2.65. The pit currently captures surface water from the Sparke Street, a grassed portion north of the roadway and infrastructure to the south of the roadway. It typically receives overflows from the filling of water carts from the water mains to be used

for dust suppression and wash down water from the car wash when in operation. No water is reused from this pit. Settled sediment is removed off-site by a contractor.

Water collected by the sediment trap is then released to Ironbark Creek via a swale and culvert that runs along the western boundary alongside the railway corridor. These flows mix with the flows from the Hammer Mill catchment above.

Non-ferrous facility

The non-ferrous facility sump is designed to capture first flush water from Catchment 5, truck wash runoff and dust suppression runoff from stockpiles of shredded metals. This area is predominately compressed exposed earth areas and is used for heavy vehicle traffic access.

This sump has a capacity of approximately 180 m³ (10 m (width), 10 m (length), 1.8 m (depth)). If the storage level is at an operating level of 300 mm above the bottom of the pit (i.e. available capacity = 150 m³). The sump is located adjacent to Ironbark Creek on the Site's southern boundary. Surface water in this sump is released to Ironbark Creek via one of two ways:

- Pump transfer: water is pumped through two settling tanks to reduce sediment loading, and then discharges to Ironbark Creek via a geotextile bag which captures suspended solids, or
- Overflow: when surface water flow exceeds the transfer pump and settling tank capacities, surface water overflows and discharges untreated directly to Ironbark Creek.

3.4 Site water balance

A detailed report on the site water balance prepared by AECOM (2020) is provided in Appendix A and should be referred to for further detail. The key findings of the water balance are summarised in the following section of the SWMP.

3.4.1 Sources of water

The water balance addresses areas and activities within the project area that comprise the metal recycling activities affected water management system.

3.4.2 Water use

A schematic diagram of the water inputs and outputs for the water balance for the three site water collection points::

- First Flush Pit (Figure 3)
- Sediment Trap (Figure 4)
- Non-ferrous facility sump.(Figure 5)

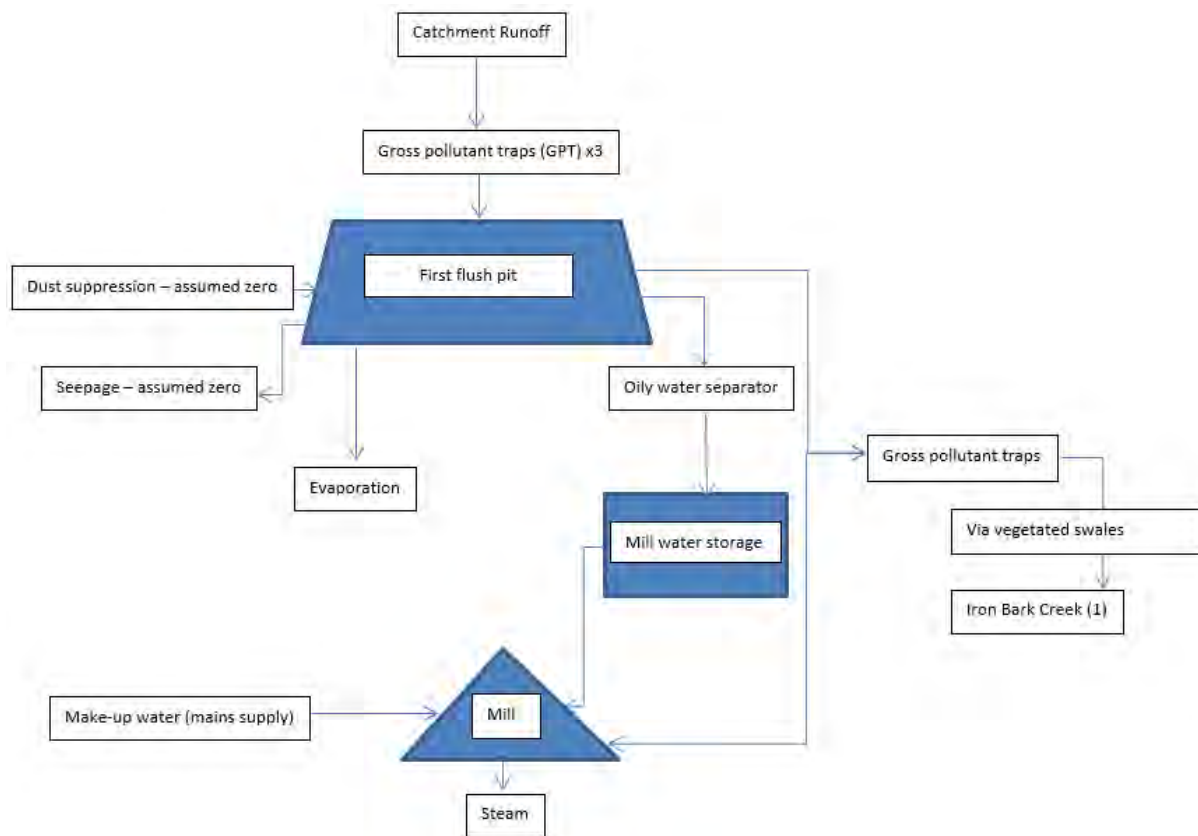


Figure 3 First Flush Pit process flow diagram

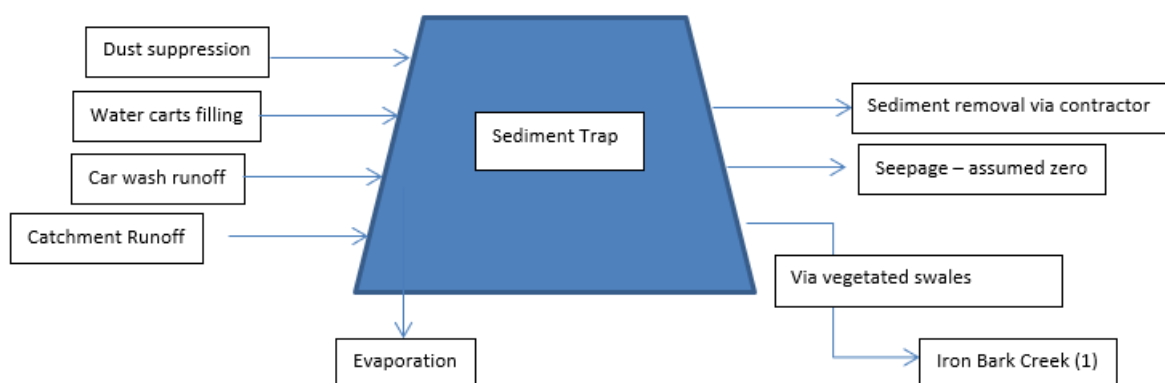


Figure 4 Sediment Trap process flow diagram

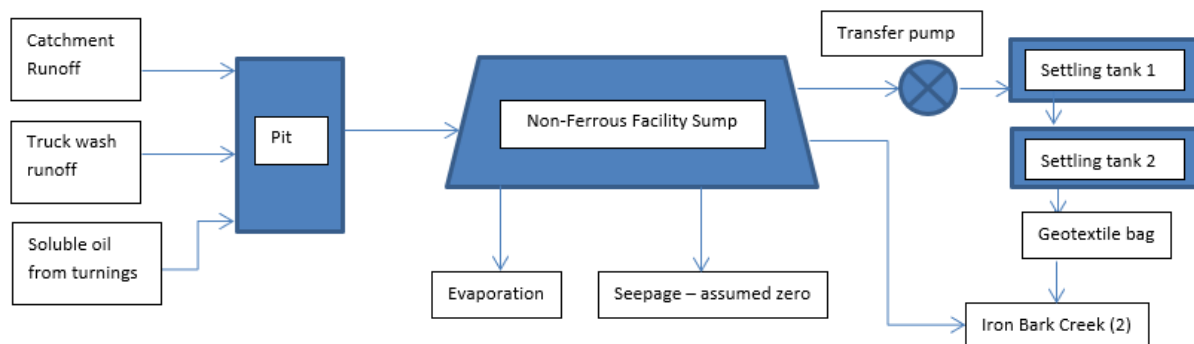


Figure 5 Non-ferrous facility Sump process flow diagram

3.4.3 Water balance outputs and conclusions

A summary of the annual water balance statistics for the current stormwater management system are presented in the Water Balance Report Appendix A. The conclusions drawn from the development of the WBM are:

- For the Shredder Yard Sump the operations and number of days of discharge is dependent on the operational capacity and the catchment runoff that reports to the sump.
- The Non-Ferrous Facility Sump and the resulting number of days of discharge is dependent on the catchment runoff with a reportable effect caused by changing the use of the truck wash facilities.
- The Internal Roadway Sediment Pit and the resulting number of days of discharge is dependent on the catchment runoff that reports to the sump, with a reportable difference with the use of the car wash facilities.

Shredder Yard Sump

The modelling of the Shredder Yard indicates that all outflows are via the pipe network and that there are no uncontrolled overflows. Piped overflows from the Shredder Yard Sump are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor. With no uncontrolled overflows there is no need for any additional water management procedures.

Internal Roadway Sump

The model does indicate that there are uncontrolled overflows from the Internal Roadway Sump. The resulting uncontrolled flows per year are provided in Appendix A Water Balance Table 9. The piped flows from the Sump and uncontrolled flows are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor, with flows from the Shredder Yard Sump.

Non-Ferrous Facility Sump

The model does indicate that there are uncontrolled overflows from the Non-Ferrous Sump. The resulting uncontrolled flows per year are provided in Appendix A Water Balance Table 9. In order to reduce the uncontrolled overflows to 1-2 events in a 95% percentile, a number of options were considered. In order to optimise the system an increased pump rate from the 60L/min to 220L/min would be required and maintaining levels in the sump as low as practical along with use of the water for dust suppression over the area at a rate of (5mm/day-rainfall), in order to reduce overflows to the required 1-2 spills per year, refer Appendix A Water Balance Figure 13.

Limitations in the model

The model is limited by the information available. There are no flow meters used on site to validate the inputs and outputs from the model.

3.5 Water quality

3.5.1 Surface Water Sampling Plan

In accordance with EPL requirements, AECOM developed a Sampling and Analysis Plan (SAP) in August 2019. The objective of the SAP was to provide sufficient details with respect to the sampling approach and methodology so that the data collected is representative and of adequate quality therefore providing a robust basis for decisions to be made to characterise site water discharge.

Constituents of potential concerns requiring assessment based on current site activities included:

- heavy metals (arsenic, barium, cadmium, chromium III, chromium VI, copper, nickel, lead, zinc, mercury, iron, manganese)
- total recoverable hydrocarbons (TRH)
- Trichloroethylene (TCE)
- polycyclic aromatic hydrocarbons (PAHs)
- Ethylene Glycols
- benzene, toluene, ethylbenzene, xylenes (BTEX)
- Per and poly-fluoroalkyl substances (PFAS).

Following EPA review of the SAP, the following analytes were added to the sampling regime

- Aluminium
- Magnesium
- Molybdenum
- Lithium
- Silver
- Strontium
- Tin
- Vanadium
- Total Phosphorus
- Total Nitrogen
- Potassium
- Polychlorinated biphenyls (PCBs)
- Total Dissolved Solids (TDS).

3.5.2 Discharge Characterisation results

Following completion of the SAP, AECOM completed surface water sampling at various locations across the Site and off-site to facilitate development of a discharge characterisation report (DC, March 2020). Additional analytes requested by the EPA (discussed above) were later incorporated into the surface water sampling regime.

The objectives of this assessment were to characterise stormwater discharges from the Site with respect to the identified CoPCs concentrations to establish the requirements for a surface water sampling regime and associated management plan.

AECOM collected surface water samples, over five events between August 2019 and March 2020, from the various on-site water storage facilities (i.e. first flush pit (SW02A), sediment trap (SW02A) and non-ferrous facility sump (SW05A)), discharge points (SW02B, SW03B, SW05B and SW06) and within Ironbark Creek (upstream (SW07) and downstream (SW08)) refer Figure 6.

Heavy metals/metalloids, PAHs and PFAS concentrations were reported above the adopted site assessment criteria (or the laboratory Limiting or Reporting (LOR)) in discharge water collected from SW06 and SW05B (i.e. prior to discharge into Ironbark Creek) as shown below.

Table 3 Summary of Exceedances at SW05B

SW05B				
CoPC	SAC	18/01/20	10/02/20	5/03/20
Lead (mg/L)	0.0044	0.0257	0.0165	0.0766
Boron (mg/L)	0.37	1.51	0.927	3.78
Copper (mg/L)	0.0013	0.0272	0.0123	0.107
Iron (mg/L)	0.3	0.198	0.348	1.88
Manganese (mg/L)	0.08	0.29	0.147	0.423
Nickel (mg/L)	0.007	0.0063	0.0048	0.0246
Zinc (mg/L)	0.015	0.061	0.029	0.2
Anthracene	0.01	<0.1	1.3	<0.1
Benz(a)anthracene (ug/L)	0.018	0.1	4.1	0.2
Benzo(a)pyrene (ug/L)	0.1	0.06	6.1	0.11
Phenanthrene (ug/L)	0.6	0.1	5.1	0.2
PFOS (ug/L)	0.00023	0.0009	0.076	0.0448

Table 4 Summary of Exceedances at SW06

SW06				
CoPC	SAC	17/09/19	10/02/20	5/03/20
Lead (mg/L)	0.0044	0.01	0.0013	0.0017
Copper (mg/L)	0.0013	0.011	0.0116	0.0102
Iron (mg/L)	0.3	0.74	0.083	0.019
Manganese (mg/L)	0.08	0.246	0.102	0.0141
Zinc (mg/L)	0.015	0.093	0.023	0.012
Benz(a)anthracene (ug/L)	0.018	<0.1	<0.1	0.1
Phenanthrene (ug/L)	0.6	0.7	0.4	0.2
PFOS (ug/L)	0.00023	0.0808	0.15	0.0336

The metals concentrations comprise predominantly particulate matter, as indicated by the difference between the total concentrations from the first event and the filtered concentrations over subsequent events.

Some CoPC concentrations recorded upstream (SW07) and downstream (SW08) of the Site were also recorded in excess of the adopted site assessment criteria noting that Ironbark Creek is tidal and therefore water can flow in both directions. These results indicate the potential for ecological impacts to aquatic receptors within Ironbark Creek.

To further assess the potential for ecological risk, AECOM conducted a series of site-specific ecotoxicity testing, using a representative discharge water sample, as part of the discharge impact assessment (DIA AECOM, 2020). The DIA did not identify any acute risks to aquatic receptors from cumulative exposure to CoPCs in the discharge waters. A mixing zone of 24m and 33.5m from the Site was identified within which 95% and 99% of species, respectively, would be protected from chronic toxicity (see Figure 7 below). Refer to the DIA (AECOM, 2020b) for further information.

Preliminary source characterisation based on the available dataset indicate that both the sediment trap and first flush pit contribute (depending on the CoPCs) to reported impacts at discharge point SW06. Identified contaminants at the discharge points were predominantly dissolved and suspended heavy metals and PAHs although at much lower concentrations. No exceedances were reported for cyanide, monocyclic aromatic hydrocarbons (MAHs), polychlorinated biphenyl (PCBs) and trichloroethylene (TCE). Furthermore, additional unidentified sources contributing to boron and PFAS impacts at SW06 may exist, however, these substances are not typically associated with scrap metal recycling activities.






Figure 6: Sampling locations



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Legend

-  Surface water sample locations
-  Discharge water flow path
-  Site boundary

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FIGURE 3: PREDICTED MIXING ZONE FOR REPRESENTATIVE DISCHARGE VIA VEGETATED SWALE

Legend

- Site boundary
- 95% Species Protected
- 99% Species Protected
- Vegetated Swale



0 10 20 Meters

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4.0 Potential site improvements

A potential site improvements management plan is presented figurately in Figure 8







FIGURE 8: Site Improvement Plans



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Legend

-  Sampling locations
-  Discharge Water flow path
-  Site boundary
-  Water Flow Direction

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4.1 Improvement of stockpiling and processing areas

AECOM propose that Infrabuild improve the external stockpiling and processing areas to rectify issues of surface water ponding in and around the shredder yard. It is noted that this is an initial and partial solution. This will involve carrying out the following activities:

1. Clear the affected stockpiling and processing areas of all materials to expose depressed areas of hardstand and immediately surrounding area (say, within 2 m of the depressed area).
2. Delineate the area for repair based on the depression and apparent structural weakness. If delineation of the depression is unclear, undertake a topographic survey to determine accurate ground level.
3. Remove (by saw-cut) broken / failed concrete and steel reinforcement and the underlying unsuitable material from the depression.
4. Replace the weak / unsuitable subgrade material with sound structural fill to subgrade level (requires civil / geotechnical guidance). All material removed should be classified and managed in accordance with the NSW EPA Waste Classification Guidelines.
5. Grade the area to eliminate the depressed ponding area, to drain freely and direct runoff toward the shredder sump.

It is understood that Infrabuild completed concrete resurfacing works in accordance with dust mitigation measures as presented in **Appendix C** (refer Action 7 and 11).

4.2 Improvements to storage capacity

Currently the non ferrous facility sump has a 180m³ sump and tank storage of 60m³ to which water is pumped and released via a gravity feed through three filtration bags and released to the environment. In order to improve the capture to the storage facilities a larger pump rate of 220L/min from the sump to the storage tanks and the release via gravity through the filtration bags was modelled as an effective way to increase the rate of capture and avoid uncontrolled flow from the sump. In increasing the pump and treat rate and the reuse of water for dust suppression to meet the EPA objectives i.e. the number of spills to 2 uncontrolled overflows in a 95% percentile in accordance with Table 6.1 and Table 6.2 of Managing Urban Stormwater: Soils and Construction, Volume 2E Mines and Quarries for a sensitive environment with 3 years disturbance.

To ensure that the existing infrastructure fulfils first flush related functioning these facilities need to be operated as low as practical. These need to be designed to ensure that the inflow to the sumps is re designed in such a manner to allow for collection of first flush followed by diversion once facilities are full.

It is recommended where possible to provide reuse of the water collected by the non ferrous facility sump, to manage uncontrolled discharges.

To further qualify the influence of stormwater generated at the Hexham Site on the receiving water resources, AECOM propose that Infrabuild implement a surface water monitoring program as outlined in Section 6.2.

4.3 Implementation of gross pollutant traps and sediment traps

It is proposed that gross pollutant traps are installed for the capture of flows within the non ferrous facility before flows are directed to the non-ferrous facility sump to ensure larger debris is captured for removal off site.

4.4 Bunding around site perimeter

It is proposed where the site falls towards Ironbark Creek (Catchment 4) that bunds are provided to ensure water is contained on site and that no surface water runoff is directly discharge to Ironbark Creek without prior treatment.

5.0 Preferred mitigation and management measures

5.1 Surface water management controls

Infrabuild Recycling – Hexham surface water control strategies, performance indicators and recommended corrective actions are outlined in Table 5.

Table 5 Surface water management controls

Surface Water Management Controls	
Objectives	<ul style="list-style-type: none"> • Decrease risk of stockpiled material and surface water mixing • Decrease risk of soil erosion and sedimentation from the stockpiled material • Decrease risk of potential contaminants being released into surrounding environment
Control Measures and Management Strategy	<ul style="list-style-type: none"> • Develop and implement a regular site 'housekeeping' plan • Drainage channels are regularly inspected for obstructions • Storage and stockpiling of material are not allowed in areas of concentrated flow • Maintain site grades and profiles to allow free surface drainage and sheet flow at a reasonable grade so as to control velocity, but prevent ponding • Where necessary, temporary diversion structures are installed to separate clean surface water and contaminated water
Performance Indicators	<ul style="list-style-type: none"> • Frequency of observance and evidence of surface water ponding • Frequency of observance and evidence of surface scouring and erosion • Frequency of observance and evidence of sediment and debris build-up in drainage channels • Level of compliance with water objectives as outlined in the POEO Act • Water monitoring programme and associated levels of exceedances observed to provide an indication of achievement
Corrective Actions	<ul style="list-style-type: none"> • As necessary, perform root cause analysis to determine the reason for poor performance and non-compliance, including a review (including revision where required) of maintenance program procedures • Implement relevant recommendations of root cause analysis • Review and modify site procedures to achieve compliance • Repair, maintain, modify and / or install additional erosion and sediment controls as necessary to reinstate and achieve compliance • Conduct toolbox talks • Review, modify and / or conduct additional staff education and awareness training • Review, maintain, modify and / or repair site drainage structures as necessary to reinstate and achieve compliance

5.2 Surface water monitoring program

As discharges are unavoidable a surface water monitoring program is proposed to be completed as detailed in the following sub-sections, following which, the results will be reviewed, and monitoring and management plan revised accordingly.

5.2.1 Monitoring of rainfall

Installation of a rain gauge to measure the rainfall on site daily, this should be recorded and reproduced as required.

5.2.2 Monitoring locations

The plan provides the locations of surface water monitoring locations. The location of proposed surface water monitoring points are shown on Figure 9 with the rationale presented in Table 6. Surface water sampling is proposed to be completed during every discharge events only on a quarterly basis (once every three months).







FIGURE 9: PROPOSED SAMPLING LOCATIONS



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Legend

-  Sampling locations
-  Discharge Water flow path
-  Site boundary
-  Water Flow Direction

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Table 6 Surface water monitoring

Location ID	Description	Rationale
SW02B	Shredder Yard - Discharge point into western boundary swale.	Evaluate water quality and quantity impacts associated with stormwater discharge from the Shredder Yard to the western boundary swale.
SW03B	Internal Roadway (i.e. Sparks Road) - Discharge point into western boundary swale.	Evaluate stormwater impacts associated with runoff generated off the Internal Roadway contributing catchment discharging to the western boundary swale.
SW05B	Non-ferrous facility discharge point into Ironbark Creek	Assessing water quality flowing into Ironbark Creek following treatment
SW06	SSN discharge point into Ironbark Creek – collect sample directly from outlet	Assessing overall water quality flowing into Ironbark Creek

5.2.3 Laboratory analysis

The list of CoPCs has been refined based on reported concentrations as part of the discharge characterisation report. Surface water samples collected during the monitoring program are to be analysed for the following CoPCs and attributes:

- TRH
- BTEX
- PAHs
- Glycols
- Total Suspended Solids (TSS)
- Turbidity;
- pH;
- Electrical Conductivity (EC);
- Oil & Grease
- Ca/K/Mg/Na
- Nutrients (Nitrogen, Phosphorus, Nitrite + Nitrate and Kjeldahl Nitrogen)
- Dissolved and total heavy metals and metalloids (i.e. Aluminium, Arsenic, Boron, Cadmium, Chromium VI, Copper, Iron, Lead, Manganese, Mercury, Molybdenum, Nickel).

5.2.4 Site assessment criteria

Chemical concentrations should be compared against the assessment criteria obtained from the following sources (in order of preference):

- ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Water Quality. Australian and New Zealand Governments and Australian state and territory governments, Canberra ACT. ANZG (2018) provides default guideline values (DGVs) which represent a generic starting point for assessing water quality and are recommended for generic applications in the absence of jurisdictional or site-specific guideline values. The following should be noted with respect to the ANZG (2018) guidelines:
 - The DGVs were chosen in accordance with ANZG (2018) recommendations i.e. criteria that are considered to be 'very high', 'high' and/or 'moderate' reliability. These 'reliable' DGVs were derived using ecotoxicity data for at least three species from at least three taxonomic

groups and includes DGVs that were derived primarily based on the species sensitivity distribution (SSD) approach

- For chemicals with a potential to bioaccumulate, or chronic ecotoxicity requires consideration, DGVs that protect 99% of species were adopted
 - DGVs that protect 95% of species were adopted for all other chemicals, where available, as they are considered to be protective of a slightly-to-moderately disturbed ecosystem such as Ironbark Creek and the Hunter River
 - In accordance with Warne *et al* (2018) and ANZG (2018) recommendations, DGVs considered to be 'low reliability' or of 'unknown reliability' (as published in ANZECC (2000)) were not adopted because they are considered to have "*extreme uncertainty*" regarding their derivation methodology and therefore "*..should not be used..*".
 - Where marine DGVs were unavailable, freshwater DGVs can be adopted.
- *Canadian Council of Ministers of the Environment (CCME), Canadian Water Quality Guidelines for the Protection of Aquatic Life*, long-term guideline, marine.

A summary of the adopted guidelines is presented below

Table 7 Site Assessment Criteria

Chemical Grouping	CoPCs	units	ANZG (2018) (a,b)	Drinking Water Guidelines (c)	CCME4 (d,e)	Newcastle DCP 2012 (f)
General Water Quality	Total Suspended Solids	% Reduction		600 ^g		85% reduction in the average annual load
	Total Nitrogen	% Reduction				45% reduction in the average annual load
	Phosphorous	% Reduction				65% reduction in the average annual load
	Gross Pollutants	% Reduction				90% reduction in the average annual load
	Hydrocarbons	% Reduction				100% removal
	pH			6.5-8.5		
Per- and Polyfluoroalkyl Subst	Perfluorooctanoate	µg/L	0.019	0.56		
	Perfluorooctane sulfonic acid (PFOS)	µg/L	0.00023	0.07		
BTEX	Benzene	µg/L	500	1		
	Ethylbenzene	µg/L	80	3-300		
	Toluene	µg/L	180	25-800		
	Xylene (m & p)	µg/L	75			
	Xylene Total	µg/L	75	600		
Chlorinated hydrocarbons	Trichloroethene	µg/L	330			
Glycols	Ethylene glycol	µg/L	330			
Inorganics	Cyanide	mg/L	0.004	0.08		
Metals	Aluminium (Filtered)	mg/L	0.055			
	Arsenic	mg/L	0.013	0.01		
	Arsenic (Filtered)	mg/L	0.013			
	Boron	mg/L	0.37	4		
	Boron (Filtered)	mg/L	0.37			
	Cadmium	mg/L	0.0007	0.002		
	Cadmium (Filtered)	mg/L	0.0007			
	Chromium (Hexavalent)	mg/L	0.0044	0.05		
	Chromium (Hexavalent Filtered)	mg/L	0.0044			
	Chromium (Trivalent)	mg/L	0.027			
	Copper	mg/L	0.0013	1.2		
	Copper (Filtered)	mg/L	0.0013			
	Iron	mg/L		0.3		
	Iron (Filtered)	mg/L			0.3	
	Lead	mg/L	0.0044	0.01		
	Lead (Filtered)	mg/L	0.004			
	Manganese	mg/L	0.08	0.1-0.5		
	Manganese (Filtered)	mg/L	0.08			
	Mercury	mg/L	0.0001	0.001		
	Mercury (Filtered)	mg/L	0.0001			
	Molybdenum (Filtered)	mg/L	0.034			
	Nickel	mg/L	0.007	0.02		
	Nickel (Filtered)	mg/L	0.007			
	Silver (Filtered)	mg/L	0.0014	0.1		
	Vanadium (Filtered)	mg/L	0.1			
	Zinc	mg/L	0.015	3		
	Zinc (Filtered)	mg/L	0.015			
PAH/Phenols	Acenaphthene	µg/L			5.8	
	Anthracene	µg/L	0.01			
	Benz(a)anthracene	µg/L			0.018	
	Benzo(a)pyrene	µg/L	0.1	0.01		
	Fluoranthene	µg/L	1			
	Naphthalene	µg/L	50			
	Phenanthrene	µg/L	0.6			
Chlorinated Biphenyls	Aroclor 1242	µg/L	0.3			
	Aroclor 1254	µg/L	0.01			

ANZG DGV (2018), marine, slightly to moderately disturbed ecosystems. ANZG (2018) DGVs in red text indicates the value is protective of 99% species.

a - freshwater DGV from ANZG (2018) were adopted for ethylene glycol, boron, arsenic, molybdenum, Aroclor 1260, Aroclor 1242 as a low reliability value as no DGV is available for marine water.

b - note that a low reliability marine DGV was adopted for manganese

c - National Health and Medical Research Council, Natural Resource Management Ministerial Council, National Water Quality Management Strategy, Australian Drinking Water Guidelines 6 (2011), Version 3.5 Updated August 2018.

d - only presented where an ANZG (2018) DGV was not available

e - freshwater value adopted as a low reliability value as no value is available for marine water

f - Newcastle DCP 2012 Section 7.06 - Stormwater - commenced 03/04/2017. Modelling assessment required to meet these targets (MUSIC modelling)

g - TSS compared to TDS value in the absence of TSS guideline value

Analytes coloured blue identified by AECOM of Chemicals of Potential Concern requiring analysis

5.2.5 Sample collection

Surface water samples should be collected either directly or via the use of a telescopic sampling pole. Groundwater samples should be collected via low-flow techniques to minimise disturbance to the water column. The following sampling principals should be followed:

- Water quality parameters at each sampling locations should be collected and include Temperature, dissolved oxygen (DO), pH, electrical conductivity (EC) and oxido-reduction potential (ORP)
- Surface water samples should be collected directly from the outlet where applicable (e.g. pipes). Samples from within the creek should be collected at a depth of between 100mm and 200mm below the surface
- Samples should be labelled with a unique sample ID (e.g. SW02B, SW03B etc.) in addition to sampler initials, collection date and time.

5.2.6 Reporting

Results collected as part of the monitoring program shall be recorded for reporting at the end of the sampling program. The report shall include:

- Overview of the monitoring works undertaken including any deviations from the procedures outlined in this SWMP
- Screening of the results against the site assessment criteria
- Site figures presenting sampling locations and any relevant / pertinent features
- Analytical summary tables, comparison of CoPC results against the site assessment criteria, and where appropriate, statistical analysis of water quality trends and commentary of any discernible trend
- Copies of field forms, laboratory certificates and chain of custodies.

5.3 Staff training

In accordance with best practice management, all InfraBuild staff should be appropriately trained. Staff education and awareness activities relating to surface water management should include the following:

- Induction program incorporating site-specific training of water and soil management issues
- Formal training for site personnel directly responsible for soil, water and erosion issues
- Compliance with EPL conditions and obligations under POEO Act
- Toolbox talks to inform staff of operational issues that could arise and mitigation measures
- Contractors working on site should also be made aware of general environmental obligations to prevent environmental harm and the use of on-site spill kits, should they be required in the event of an emergency.

5.4 General housekeeping

Key principles that should underpin surface water management at the site include:

- Restrict access to undisturbed areas such as the swale drain and other designated drainage features
- Locate stockpiling areas so that overland flow paths are not likely to be obstructed
- Inspect the site routinely (especially during and immediately after rain events) to identify and rectify maintenance requirements for hardstand and drainage elements.

5.5 Site inspections and monitoring

In accordance with best practice management, all surface water management controls should be inspected at the following frequencies and include the following checks as a minimum:

- Daily Site Inspections (During and immediately following rain events that generate runoff)
 - All drainage, erosion and sediment controls
 - Occurrences of excessive sediment deposition (whether on site or off site)
 - All site discharge points
- Weekly Site Inspections
 - All drainage, erosion and sediment controls
 - Occurrences of excessive sediment deposition (whether on site or off site)
 - Occurrences of debris or sediment placed, deposited, or washed from the site, including deposition by vehicular movements
- Following Runoff Producing Rainfall (Within 18 Hours of Rainfall Event)
 - All drainage, erosion and sediment controls
 - Occurrences of excessive sediment deposition (whether on-site or off-site)
 - Occurrences of debris or sediment placed, deposited, or washed from the site, including deposition by vehicular movements.

5.6 Roles and responsibilities

Table 8 outlines delegated roles and associated responsibilities for surface water management at InfraBuild – Hexham.

Table 8 Roles and Responsibilities

Role	Operation	Inspection	Maintenance	EPL Compliance
Operation Manager	✓			✓
Branch Manager	✓			✓
Site Supervisor	✓	✓	✓	✓
Site Personnel			✓	✓
Contractors			✓	✓

5.7 Summary and timeframes for implementation

Table 9 outlines the mitigation / management measure noted, whether it is feasible and the time period for scheduled introduction.

Table 9 Summary of timeframes for implementation

Mitigation / Management Measure	Achievable	Scheduled
Improvement of stockpiling and processing areas - repairs to concrete surface in and around the ferrous facility, to rectify issues of ponding surface water.	Yes	Within 12 months
Provision of hardstand areas - to improve the stockpiling and processing areas to rectify issues of ponding surface water at the site and the mobilisation of sediments via runoff and the leaching and infiltration of contaminants to the groundwater particularly in relation to the non ferrous facility south of the internal	Yes / dependent on capital funds	Within 3 years

Mitigation / Management Measure	Achievable	Scheduled
road. This would require the implementation of a concrete hardstand where stockpiles are placed and where vehicles are trafficked.		
Non-ferrous sump transfer pump increased rate - From the 60L/min to 220L/min to maintain levels in the sump as low as practical	Yes	Within 12 months
Utilisation of water for dust suppression - from settling tanks over the area at a rate of 21KL/day in order to reduce overflows to the required 1-2 spills per year.	Yes	Immediate
Gross Pollutant Traps - for the capture of flows within the non-ferrous facility before flows are directed to the first flush pits to ensure larger debris is captured for removal off site.	Yes	Within 2 years
Bunding around site parameter - It is proposed where the site falls towards Ironbark Creek (Catchment 4) that bunds are provided to ensure water is contained on site and that no surface water runoff is directly discharge to Ironbark Creek without prior treatment.	Yes	Within 12 months

6.0 Key References

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CCME (2008) Canada-Wide Standard for Petroleum Hydrocarbons (PHC) in Soil: Scientific Rationale. Supporting Technical Document January 2008, PN 1399, Canadian Council of Ministers of the Environment

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National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended on 16 May 2013 (ASC NEPM, 2013)

NSW EPA (2004) Approved Methods for the Sampling and Analysis of Water Pollutants in New South Wales

NSW EPA (2017) Proposal for Minimum Environmental Standards in the Scrap Metal Industry

NSW OEH (2011) *Guidelines for Consultants Reporting on Contaminated Sites*

Appendix A

Site water balance

Appendix A Site water balance

Water balance model

InfraBuild Recycling Facility - 107 Sparke Street Hexham

Water balance model

InfraBuild Recycling Facility - 107 Sparke Street Hexham

Client: InfraBuild Recycling

ABN: 28 002 707 262

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Quality Information

Document Water balance model

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Date 17-Dec-2020

Prepared by Kelly Mulhearn

Reviewed by Amghar Mohand

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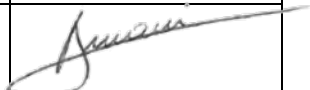
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			Name/Position	Signature
A	02-Jul-2019	Draft for review	Tama Armani Senior Environmental Scientist	
B	09-Sep-2019	For submission to EPA	Tama Armani Senior Environmental Scientist	
0	17-Dec-2020	Addressing EPA/Client Comments	Tama Armani Senior Environmental Scientist	

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Executive summary

InfraBuild Recycling (formerly Liberty Recycling) engaged AECOM for the provision of environmental and engineering services for their metal recycling facility located at 107 Sparke Street, Hexham, New South Wales (herein referred to as 'the Site').

The Site is subject to an Environment Protection Licence No. 5345 (EPL 5345_ issued under the Protection of the Environment Operations Act, 1997 (POEO Act).

Recent correspondence from NSW Environmental Protection Agency (EPA) advised InfraBuild Recycling of a 'Notice of variation of licence No.5345'.

AECOM understand that InfraBuild Recycling are required, under a new condition of Environment Protection Licence (EPL) 5345 to prepare a Water Balance Model (WBM) and Surface Water Mitigation and Monitoring Plan

A WBM has been developed using GoldSim probabilistic modelling software, which is a Monte Carlo simulation package that is commonly used in the mining and industrial industry for site water management. The model has been used to estimate the performance of the InfraBuild Recycling site water management system under a range of historical climatic conditions.

WBM was set to run on a daily time step for a period of a year, the first model realisation simulates a year of operation using climate data from 1889. The second realisation then utilises climate data from 1890, the third from 1891, and so on. This process allows for a total of 130 model realisations (known as a Monte Carlo simulation) to be run from the available climate data and the development of probability distributions for key results. In this manner, the response of the InfraBuild Recycling's water management system to a wide range of historical climatic conditions is considered in a single simulation. This allows for the development of probability distributions for key results (e.g. estimated overflow water) and the probability of occurrence e.g. the 90th percentile annual site discharge.

The InfraBuild Recycling Site has three sumps to which the sites water reports, the Shredder Yard Sump, Internal Roadway Sediment Pit and the Non-Ferrous Facility Sump.

Shredder Yard Sump

Water is pumped from the Shredder Yard Sump to the Hammer Mill for use. There are two sources of water to the Shredder Yard Sump in the form of catchment runoff during storm events and runoff from dust suppression which is considered negligible. Alternatively, water is sourced from mains potable water supply. All water consumed by the Mill is lost to the system as steam.

Internal Roadway Sediment Pit

Water collected by the internal roadway sediment pit is designed to detain the first 10mm as a first flush system and then released to Iron Bark Creek via a swale and culvert that runs along the western boundary alongside the railway corridor. No water is reused from this pit.

A water cart is filled in the internal roadway, spillage when filling the water cart is not quantifiable and has not been considered in the WBM.

The water carts do provide dust suppression to the site, any resultant runoff from dust suppression has not been considered in the model. What is used for dust suppression is assumed to be lost to the atmosphere by evaporation.

Non-Ferrous Facility Sump

Sources of water to the Non-Ferrous Facility Sump (referred to onsite as the First Flush Pit) include, catchment runoff during rainfall events, truck wash facilities and dust suppression and runoff from stockpiles of engine shredding's.

Catchment runoff during rainfall events is quantifiable and modelled. The truck wash facility assumptions are as provided in Table 6. The residue contribution from stockpiles is unable to be quantified and not considered in the model.

The water carts do provide dust suppression to the site, any resultant runoff from dust suppression has not been considered in the model. What is used for dust suppression is assumed to be lost to the atmosphere by evaporation.

The assessment concluded that:

- For the Shredder Yard Sump the operations and number of days of discharge is dependent on the operational capacity and the catchment runoff that reports to the sump.
- The Non-Ferrous Facility Sump and the resulting number of days of discharge is dependent on the catchment runoff with a reportable effect caused by changing the use of the truck wash facilities.
- The Internal Roadway Sediment Pit and the resulting number of days of discharge is dependent on the catchment runoff that reports to the sump, with a reportable difference with the use of the car wash facilities

Shredder Yard Sump

The modelling of the Shredder Yard indicates that all outflows are via the pipe network and that there are no uncontrolled overflows. Piped overflows from the Shredder Yard Sump are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor. With no uncontrolled overflows there is no need for any additional water management procedures.

Internal Roadway Sump

The model does indicate that there are uncontrolled overflows from the Internal Roadway Sump. The resulting uncontrolled flows per year are provided in . The piped flows from the Sump and uncontrolled flows are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor, with flows from the Shredder Yard Sump.

Non-Ferrous Facility Sump

The model results indicate that there are uncontrolled overflows from the Non-Ferrous Sump. The resulting uncontrolled flows per year are provided in . In order to reduce the uncontrolled flows to 1-2 events in a 95% event, a number of options were considered. In order to optimise the system an increased pump rate from the 60l/min to 220L/min would be required and maintaining levels in the sump as low as practical along with use of the water for dust suppression over the area at a rate of 5 mm/day, in order to reduce overflows to the required 1-2 spills per year, refer Figure 13.

Limitations in the model

There is limited information to undertake calibration and validation of the model. There are no flow meters used on site to tune the model parameters from the model. All information available was used in the model as provided.

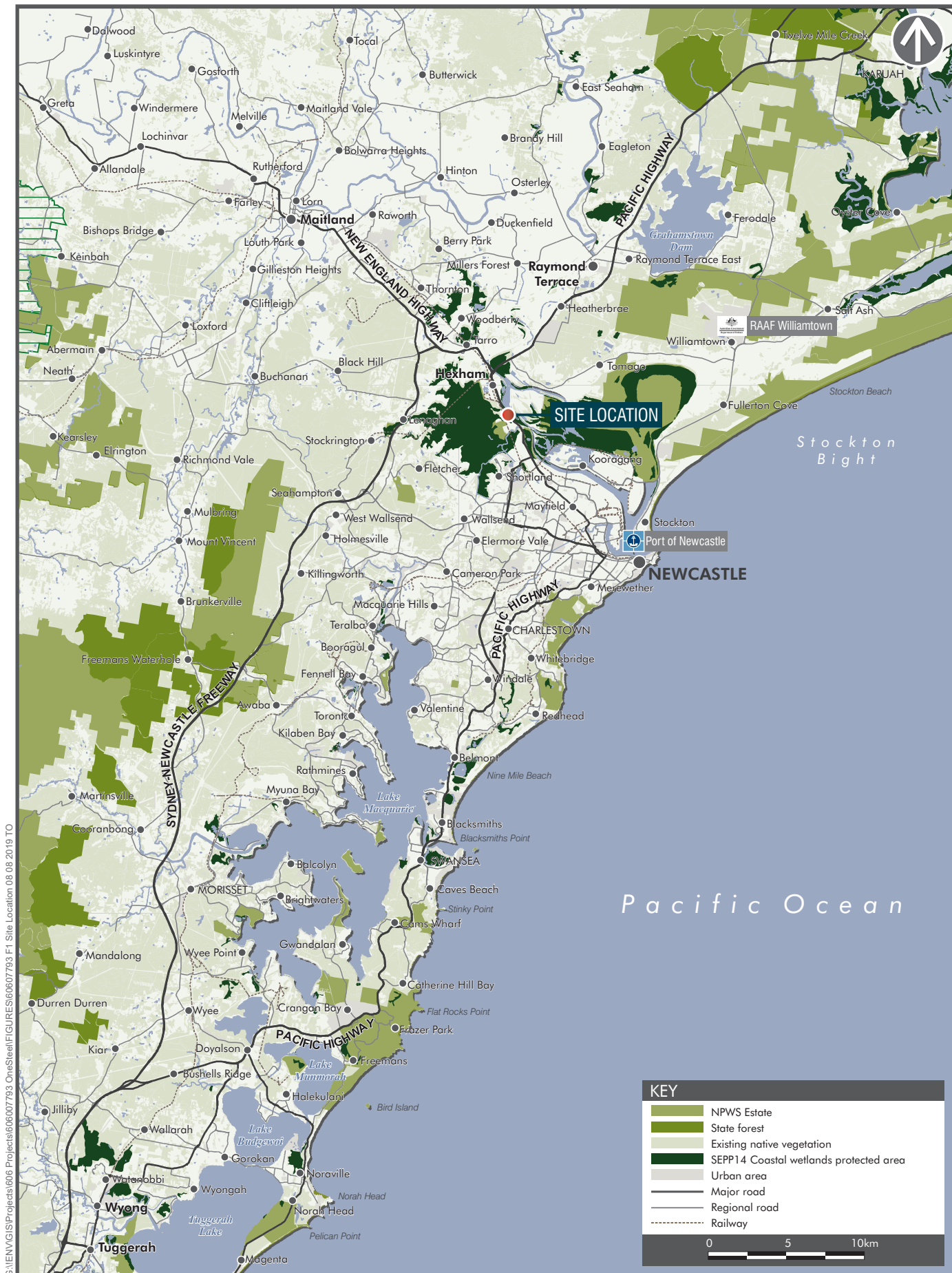
1.0 Introduction

1.1 Site overview

InfraBuild Recycling engaged AECOM for the provision of environmental and engineering services for their metal recycling facility located at 107 Sparke Street, Hexham, New South Wales.

The Site is legally identified as Lot 1 on Deposited Plan (DP) 1176316 and covers an area of approximately 7.5 ha (Refer Figure 1). The Site comprises two functioning areas with the shredder yard north of an internal roadway, and the non-ferrous facility (including offices and workshop) south of the internal roadway. The Site is bordered by Ironbark Creek to the south which is a tributary of the Hunter River located 1 km to the east.

The Site is licensed to receive up to 500,000 tonnes per year with the main operational process comprising of sorting and shredding metals (ferrous and non-ferrous) prior to being sent off-site for further processing.



1.2 Scope and objectives

The Site is subject to an Environment Protection Licence No. 5345 (EPL 5345_ issued under the Protection of the Environment Operations Act, 1997 (POEO Act).

Recent correspondence from NSW Environmental Protection Agency (EPA) advised InfraBuild Recycling of a 'Notice of variation of licence No.5345'.

We understand that InfraBuild Recycling are required, under a new condition of Environment Protection Licence (EPL) 5345 to prepare a Water Balance Model and Surface Water Mitigation and Monitoring Plan.

The new requirement of the EPL is reproduced below:

- Section 8 Pollution Studies and Reduction Programs
- U1 Surface Water Characterisation
- Water Balance Model

U1.1 The licensee must engage a suitably qualified professional, such as a hydrological engineer, to prepare an updated water balance to estimate the frequency and volume of discharges from all water storage and stormwater management infrastructure from the Premises.

U1.2 The water balance must:

- Use a time step modelling (based on a suitable climate dataset and the range of weather conditions at the premises)
- Provide the design storm of storm water management system
- Provide justification for key model assumptions (eg; runoff coefficients and water re-use rates)
- Identify, and where possible, address significant model limitations

1.3 Site inspection

A site inspection was undertaken 14 May 2019 by Kelly Mulhearn, Cye Buckland and Tama Armani of AECOM, accompanied by Glen Schrader of InfraBuild Recycling. Conditions on the day of the inspection were dry and sunny.

1.4 Overview of the site water management system

The site water management system is divided into 5 catchment areas, refer Figure 2. This Figure also provides locations of points discussed below.



AECOM

Legend

- Catchments
- Contours 2m
- Indicative stormwater alignment
- Indicative swale alignment
- Overland flow
- Railway
- Site Boundary
- Buildings
- Weighbridge

0 40 80 Meters

Site features and catchment areas
(August 2019)

Figure 2

The water generated on site is split into five catchment areas. A catchment area (catchment one) of 1.08 ha to the north of the site is vegetated and the runoff is not captured.

Catchment two is that area the Hammer Mill (shredder) for the shredder yard recycling is situated.

This portion of the Site is relatively flat, typically two-four metres Australian Height Datum (m AHD) and covers an area of approximately 2.31 ha. The Site surface is predominately covered in concrete hardstand of varying condition which supports the processing plant and related infrastructure. The Hammer Mill (shredder) is located in the central portion of the Site which feeds into the discharge conveyor and is categorised by size, and material into ferrous and non-ferrous by physical screening, magnets and optical sorting is used to separate metals.

The shredder yard sump (known on site as the first flush pit) collects the catchment runoff. The water is collected via gross pollutant traps (GPTs) before it reaches the shredder yard sump. It is sent via an oily water separator before it is stored in tanks for daily use in the Hammer Mill. The Hammer Mill uses the runoff captured which is topped up with mains water supply. The sump loses water to evaporation, with the assumptions there is no seepage losses. All water consumed by the Hammer Mill is lost to the atmosphere as steam. Overflows from the shredder yard sump are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor. Refer Figure 3 which provides a detail of the stormwater drainage and first flush pit by Ecosol (2018).



Figure 3

AMENDMENTS			
No.	Details	Date	Initial
A	PRELIMINARY ISSUE	17.05.18	SP



Scale	NTS	Designed	AF
Date	17.05.18	Drawn	SP
Full Size	A1	Checked	AF



Project Name	STORMWATER DRAINAGE AND FIRST FLUSH	Drawing No	7948-3
Client	LIBERTY ONE STEEL RECYCLING	Sheet	3 of 5
Drawing Title	107 SPARKE STREET HEXHAM NSW 2322 GENERAL ARRANGEMENT - FLUSH PIT/GPTS	Revision	A

The shredder yard sump has a capacity to store a volume of approximately 1120m³ (width 20m, length 20m, 2.8m depth). A storage of 600m³ is provided before pipe flow occurs through a 600mm diameter pipe to a point of discharge to the west of the site refer Figure 3, these outgoing flows are received by Iron Bark Creek via a channel and pipe network along the western boundary running alongside the railway corridor

Figure 4 is the process flow diagram of the site water management system for the Shredder. Whilst Plate 1 depicts the shredder yard pit.

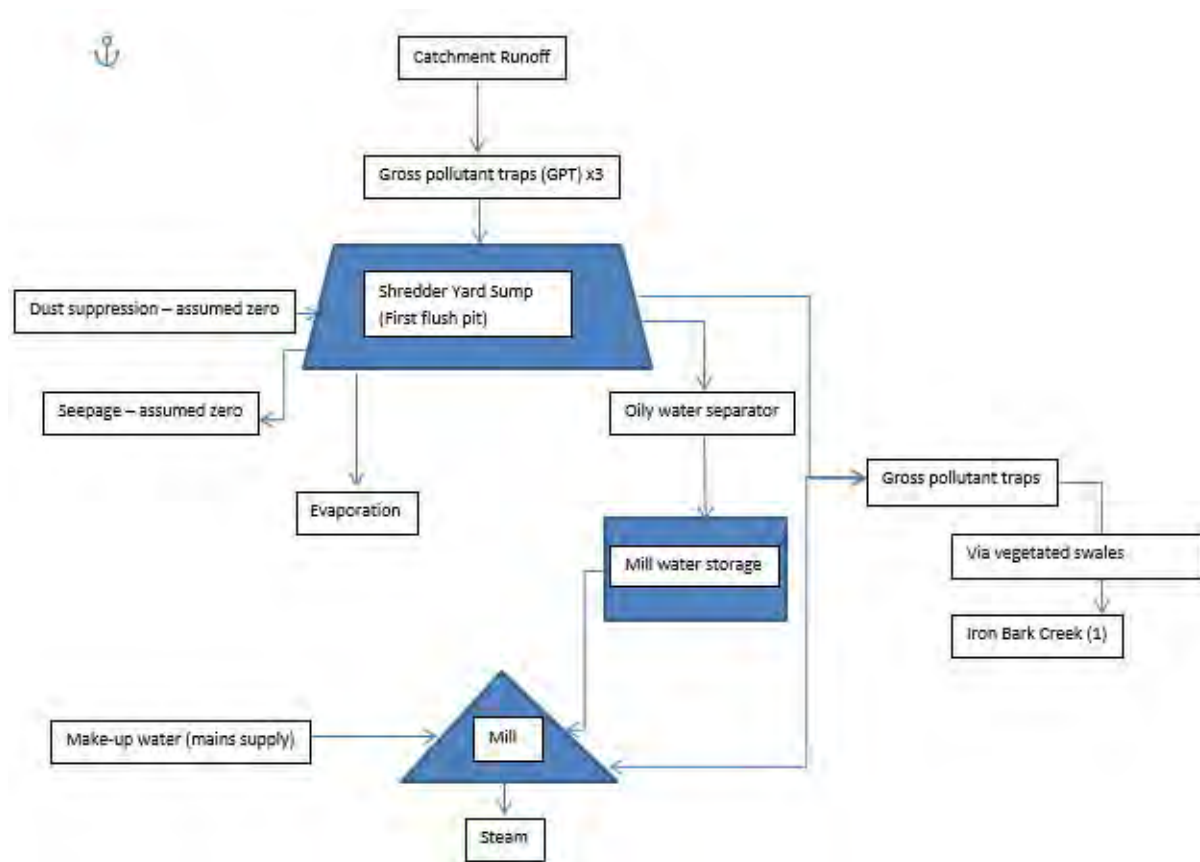


Figure 4 Shredder Yard process flow diagram

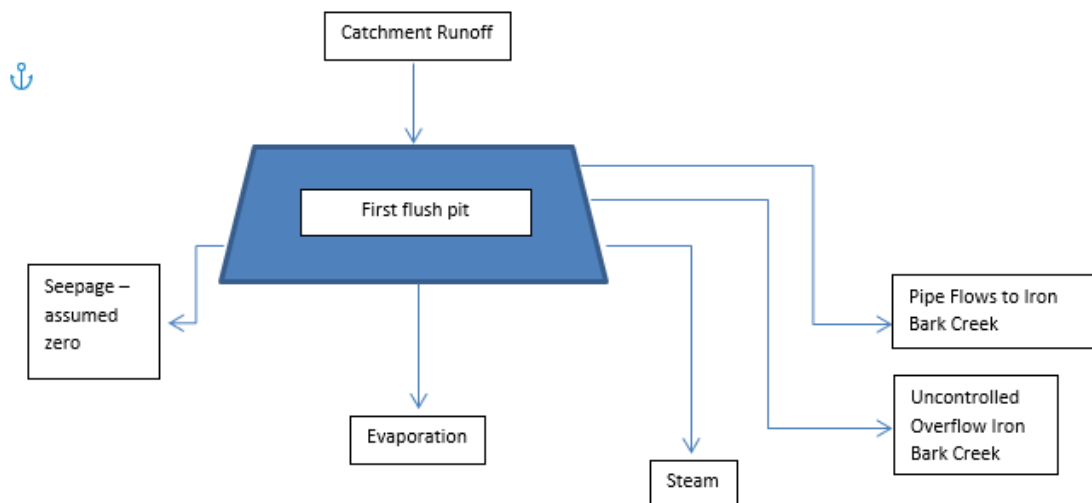


Figure 5 Shredder Yard Process Flow Diagram Modelled



Plate 1 Shredder Yard First Flush Pit

Catchment three is that area that contributes to the Internal Roadway Sediment Pit located in the south western corner of the internal roadway. The pit was designed to capture the first flush volume based on 10 mm runoff, by previous calculations approximately 153.6 m³. The sediment basin was designed to retain 84% of particles greater than 80 microns with average particle relative density of 2.65. The outgoing flows are received by Iron Bark Creek via a channel and pipe network along the western boundary running alongside the railway corridor. These flows mix with the flows from the Hammer Mill catchment above.

Sediment is removed by a contractor and disposed of offsite. It has been assumed that there is no seepage. The pit will be subject to evaporation based on the pits surface wet area. The pit does receive overflows and leaks from the top up of water carts for dust suppression, runoff from dust suppression on internal roadway, and wash down water from the car wash when in operation. Figure 6 is the process flow diagram of the site water management system for the internal roadway Sediment Pit.

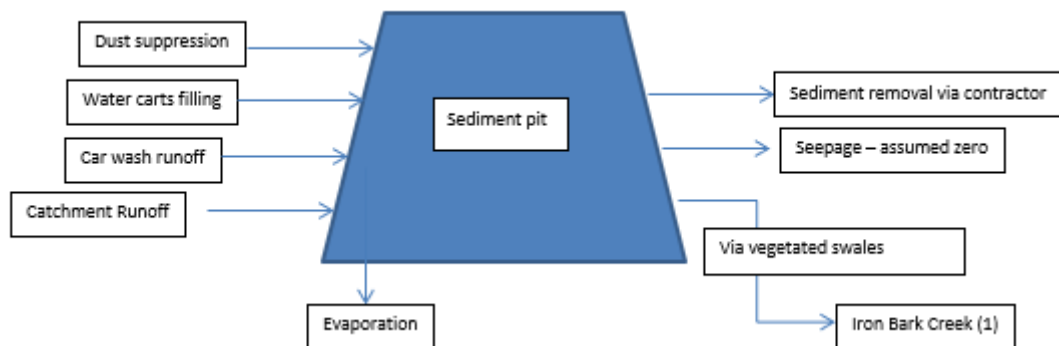


Figure 6 Internal Roadway Sediment Pit process flow diagram

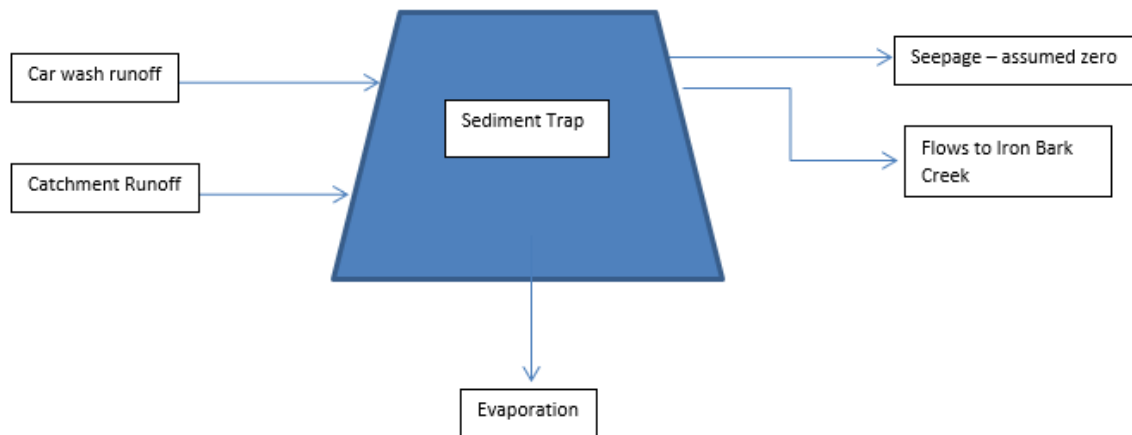


Figure 7 Internal Roadway Sediment Pit Process Flow Diagram Modelled



Plate 2 Internal Roadway Sediment Pit

Catchment four is an area in the south west of the site where the overland flow drains directly to Iron Bark Creek.

Catchment five is an area on the non-ferrous side of the site that drains to the Non-Ferrous Facility Sump (known on site as the first flush pit).

The processing area to the south of the internal roadway is relatively flat, typically two-five m AHD in elevation and covered predominately by compressed exposed earth hardstand areas and heavy vehicle traffic access. The area to the south of the internal roadway is predominately asphalt and contains general parking, and a weighbridge. The main administration building occupies the central north of the non-ferrous side with amenities building to the central west. Immediately to the south of the administration building there is a warehouse containing workshops and non-ferrous goods receipt. A wash bay is located adjacent to the mechanics workshop at the south east of the warehouse.

Scrap metal storage was evident along the south eastern and southern boundary, and within the western portion of non-ferrous side. The western portion of the Site supported facilities for cutting metals considered oversized for the shredder. A bay on the south eastern boundary was dedicated to the storage of used batteries. A holding pit, first flush pit, oil water separator and stormwater holding tanks are located on the southern boundary of the Site.

The residue contribution from stockpiles is unable to be quantified and not considered in the model.

Flows are received by the pit and the sump from the catchment runoff for the area. The truck wash runoff and residue from the turnings bunker proceed to the pit. The Non-Ferrous Facility receives flows from the pit, loses water to evaporation, but it has been assumed there is no losses via seepage. Water from the Non-Ferrous Sump is released to Iron Bark Creek via one of two ways.

The first is via a pump transfer to settling tank 1 and then to settling tank 2 and overflows via a geotextile bag to Iron Bark Creek. When flows exceed the transfer pump and settling tank capacities the Non-Ferrous Facility sump overflows and discharges untreated to Iron Bark Creek. Refer Figure 8 which provides a detail of the stormwater drainage and first flush pit by Ecosol (2018).

Figure 9 is the process flow diagram of the site water management system for the Non-Ferrous Facility.

The Non-Ferrous Facility Sump has a capacity to store a volume of approximately 180m³ (width 10m, length 10m, 1.8m depth) , If the storage level is at an operating level of 300mm above the bottom of the pit (volume spare – 150m³) this equates to the capacity to capture less than a 10yr AEP 5min storm event. The non-Ferrous Facility Sump cuts in at 1000mm and out at 300mm above the floor of the sump.



Figure 8

AMENDMENTS			
No.	Details	Date	Initial
A	PRELIMINARY ISSUE	17.05.18	SP



Scale	Designed
NTS	AF
Date	Drawn
17.05.18	SP
Full Size	Checked
A1	AF



Project Name	Drawing No
STORMWATER DRAINAGE AND FIRST FLUSH	7948-4
Client	Sheet
LIBERTY ONE STEEL RECYCLING	4 of 5
Drawing Title	Revision
107 SPARKE STREET HEXHAM NSW 2322 GENERAL ARRANGEMENT HM YARD STORMWATER DETENTION	A

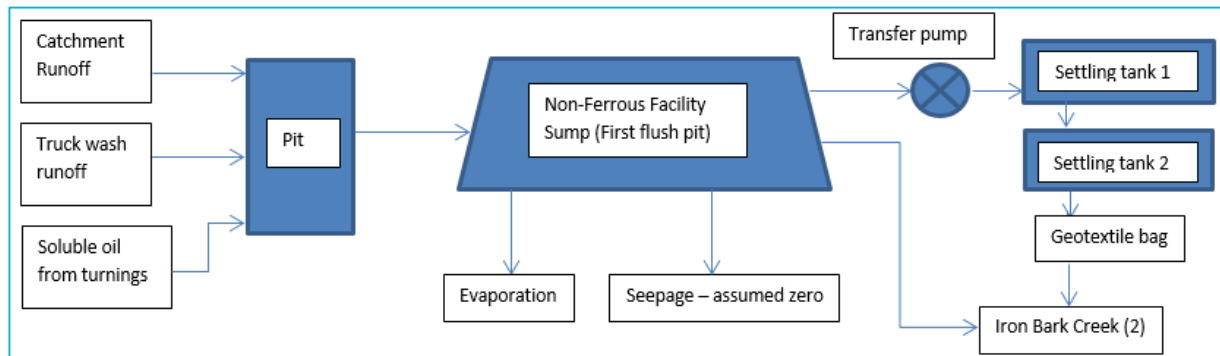


Figure 9 Non-Ferrous Facility Sump process flow diagram

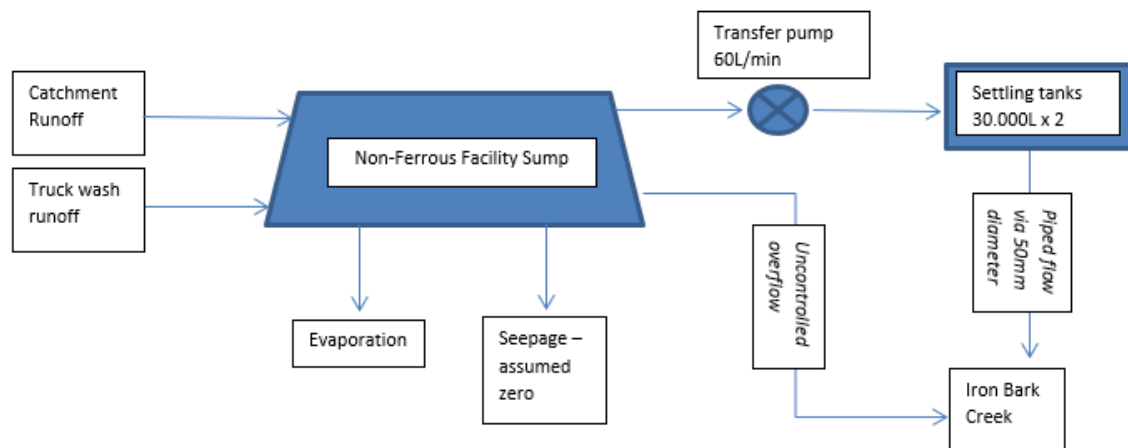


Figure 10 Non-Ferrous Facility Sump Process Flow Diagram Modelled



Plate 3 Non-Ferrous Facility Sump

1.5 Scope

Development of the site WBM included the following key steps:

- review of existing documentation (refer Appendix A)
 - Ecosol Clean Out Reports Oct 2018, November 2018, January 2018)
 - Shredder Yard Sump and Non Ferrous Sump Stormwater Drainage and Sump Plans
- update of water management schematics as per current conditions
- develop model transfer rules, key inputs and assumptions refer Appendix A
- develop of GoldSim WBM, model simulation and reporting.

All data on sump sizes and usage was provided by Infrabuild, input climate data for the WBM consists of daily rainfall and evaporation records which were sourced from the Bureau of Meteorology (BoM) SILO data drill, any assumptions that AECOM have made have been stated.

1.6 Model development

The WBM has been developed using GoldSim probabilistic modelling software, which is a Monte Carlo simulation package that is commonly used in the mining and industrial industry for site water management. The model has been used to estimate the performance of the sumps and InfraBuild Recycling site water management system under a range of historical climatic conditions.

1.7 Modelling approach

The WBM simulates the site's current operating conditions, including washdown processes, water transfers and generation and containment of catchment runoff.

In order to assess the performance of sumps and InfraBuild Recycling's water management system under a range of historical climatic conditions, multiple simulations (known as realisations) of one year's operation of the system were performed. The only difference between each realisation was the input climate data (rainfall and evaporation) which consists of 130 years (1889 to 2019) of data obtained from the Bureau of Meteorology (BoM) SILO data drill.. This method of simulation is commonly referred to as 'bootstrapping'.

Running on a daily time step, the first model realisation simulates a year of operation using climate data from 1889. The second realisation then utilises climate data from 1890, the third from 1891, and so on. This process allows for a total of 130 model realisations (known as a Bootstrap method) to be run from the available climate data and the development of probability distributions for key results. In this manner, the response of the InfraBuild Recycling's water management system to a wide range of historical climatic conditions is considered in a single simulation. This allows for the development of probability distributions for key results (e.g. estimated overflow water) and the probability of occurrence e.g. the 95th percentile annual site discharge.

Key simulation assumptions are shown below in Table 1

Table 1 Key simulation assumptions

Aspect	Assumption
Length of simulation	1 year
Simulation type	Probabilistic (bootstrapped)
Number of realisations	100

1.8 Model inputs and assumptions

1.8.1 Climate data

Input climate data for the WBM consists of daily rainfall and evaporation records which were sourced from the BoM SILO data drill. This fully synthetic data set is derived from the BoM's extensive database of recorded observations taken from its network of weather recording stations. The WBM utilises 130 years of data representing the period 1889 to 2019. Rainfall data is used by the WBM to estimate catchment run-off volumes, as well as for estimating direct rainfall onto the basins.

Pan evaporation is used to estimate dam evaporative water losses from the basins. Sump evaporative losses are calculated based on the wet surface area of the sump on daily time step.

Table 2 Climate data - key assumptions

Aspect	Assumption
Data source	SILO data drill obtained for Lat, Long: -32.85, 151.7 (decimal degrees)
Length of record	1 January 1889 to the current year
Time increment	Daily step
Rainfall	Daily total
Evaporation (class A pan)	Daily total
Evaporation pan factor	0.75 or 75 % (applied to evaporation from all basins)

1.8.2 Rainfall Runoff Modelling

The previous model used the rational method to estimate the runoff volume from the catchment using a catchment runoff coefficient of 1 for impervious areas. The runoff coefficient is a dimensionless factor designed to account for the various natural processes that intercept or otherwise prevent precipitation from turning into runoff. The runoff coefficient attempts to take into account all catchment characteristics that affect runoff. The rational method is considered a more conservative approach that generally produces a higher volume of runoff.

The results contained in the revised model used the AWBM rainfall-runoff modelling, which shows a reduction in the existing number of overflows and volumes. Figure below shows the AWBM model structure. The model calculates the moisture balance of each partial area at daily time-steps. At each time-step, rainfall is added to each of the three surface moisture stores and evapotranspiration is subtracted from each store. If the value of moisture in the store becomes negative, it is reset to zero, as the evapotranspiration demand is superior to the available moisture. If the value of moisture in the store exceeds the capacity of the store, the moisture in excess of the capacity becomes runoff and the store is reset to the capacity.

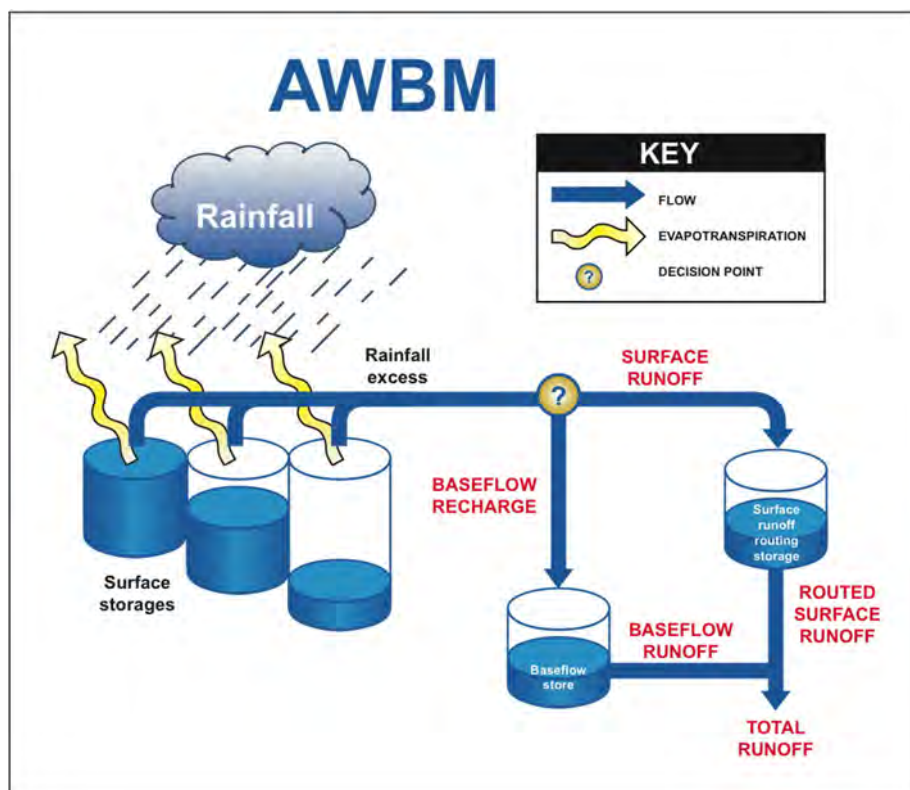


Figure 11 Structure of the AWBM rainfall-runoff model

1.8.3 Sump catchment areas

The sump catchment areas have been estimated based on analysis of limited survey data, (two metre contour information was extracted from the AECOM data hub) and site photos and advice from InfraBuild Recycling.

Table 3 Sump catchment areas

Sump	Catchment (ha)	Comments and assumptions
Shredder Yard Sump	2.31	The catchment area drains towards 3 GPT, before entering the sump. As per email supplied by Infrabuild
Internal Roadway Sediment Pit	1.94	The catchment area includes internal roadway and a grassed portion north of the internal roadway and infrastructure to the south of the internal roadway
Non-Ferrous Yard Sump	1.13	This catchment is directed towards a pit and then into the non-ferrous yard sump.

1.8.4 Direct rainfall over pond

Direct rainfall on the sumps was accounted for in the WBM separately. The Shredder Yard Sump, Internal Roadway Sump and Non Ferrous Facility Sump, were treated as though it were a turkey nest dam. This is a conservative approach as it assumes that the upstream batter/crest is 100% impervious.

1.8.5 Basin storage volumes

Tabulated data for each of the sumps, containing sump levels and corresponding volumes was provided by InfraBuild Recycling (full details provided in Appendix A) The maximum capacity of each of the basins at the spillway level is provided in Table 4.

Table 4 Sump volumes

Parameter storage details	Shredder Yard Sump	Internal Roadway Street Sediment Pit	Non-ferrous Yard Sump
Sump volume (m ³) (capacity at spillway)	20mx20mx2.8m = 1120m ³	5mx2.8mx0.3m=4.2m ³	10mx10mx1.8m=180m ³
Spillway level (m)	2.8	0.3	1.8

1.8.6 Water reuse and washdown

Shredder Yard Sump

Water is pumped from the Shredder Yard Sump to the Hammer Mill for use. There are two sources of water to the Shredder Yard Sump in the form of catchment runoff during storm events and runoff from dust suppression which is considered negligible. Water for dust suppression is sourced from mains potable water supply. All water consumed by the Mill is lost to the system as steam.

Internal Roadway Street Sediment Pit

Water collected by the internal roadway sediment pit was designed by Burke Engineering Services (refer drawings Appendix A) to detain the first 10mm as a first flush system and then release to Iron Bark Creek via a swale and culvert that runs along the western boundary alongside the railway corridor. The swale also captures flows from the railway corridor no water is reused from this pit.

The Internal Roadway Sediment Pit captures runoff from the catchment and flows from the use of the onsite car wash, which assumed the following:

Table 5 Internal Roadway Sediment Pit car wash

Parameter	Rate	Information
Car wash flow rate	11.35 l/min	Assumption http://wilsonemi.com/wp-content/uploads/2016/07/Selecting-Industrial-Grade-Pressure-Washer.pdf (Light Duty Wash)
Car wash frequency	30 per week	Assumption
Wash down duration	5 min	Assumption
Wash down losses	30 %	Assumption

A water cart is filled in the internal roadway, spillage when filling the water cart is not quantifiable and has not been considered in the WBM.

The water carts do provide dust suppression to the site, any resultant runoff from dust suppression has not been considered in the model. What is used for dust suppression is assumed to be lost to the atmosphere as evaporation.

Non-Ferrous Facility Sump

Sources of water to the Non-Ferrous Facility Sump (referred to onsite as the First Flush Pit) include, catchment runoff during rainfall events, truck wash facilities and dust suppression.

Catchment runoff during rainfall events is quantifiable and modelled. The truck wash facility assumptions are as provided in Table 6.

The water carts do provide dust suppression to the site, any resultant runoff from dust suppression has not been considered in the WBM. What is used for dust suppression is assumed to be lost to the atmosphere as evaporation.

Table 6 Non-Ferrous Facility Sump

Parameter	Rate	Information
Truck wash flow rate	22.7 l/min	Assumption http://wilsonemi.com/wp-content/uploads/2016/07/Selecting-Industrial-Grade-Pressure-Washer.pdf (Extra Heavy Duty Wash)
Truck wash frequency	30 per week	Assumption
Truck wash down duration	5 min	Assumption
Truck wash down losses	30 %	Assumption

1.8.7 Water transfer rules

Non-Ferrous Facility Sump

Water is pumped from the sump to holding tanks before being discharged to Iron Bark Creek. As the pump is initiated the tanks are emptied and pumped through a filter bag before entering Iron Bark Creek. The water transfer rules provided by InfraBuild are outlined in Table 7.

Table 7 WBM water transfer rules

From	to	Operating rules	Comments and sources
Non-Ferrous Facility Sump	Iron Bark Creek via settling tanks	Pump initiated when Non-Ferrous Facility Sump level reaches 1m above floor of pit (55%). Pump cuts out when Non-Ferrous Facility Sump Levels reaches 0.3m above floor of pit (16%) at 60l/min.	Email from Jamie Vanderclay 26/08/2019
Shredder Yard Sump	Hammer Mill (shredder) for use, water lost as steam	Pump initiated when Shredder Yard Sump reaches 0.4m (15%) above floor of pit. Pump cuts out when below 0.4m (15%).	Email from Jamie Vanderclay 26/08/2019 Pump rates: 20% - 24l/min, cold/rainy day 40% 48L/min, average 60% 72l/min warmer day 100% 120l/min dry/warm day
		Temperature <20°C and rainfall>5mm/day Pump rate 24l/min	
		Temperature>= 20°C and Temperature<23°C Rainfall>=2.8mm/day Pump Rate 48L/min	
		Temperature>=23°C and Temperature<25°C and Rainfall>=2.8mm/day Pump Rate 72L/min	
		Temperature>=25°C and Rainfall>=2.8mm/day Pump Rate 120L/min	

1.8.8 Assumptions

Table 8 Model assumptions

Parameter	Assumption and comments
Groundwater seepage	Seepage was assumed to be negligible. This is represented in the model as zero for each sump.
Sump siltation percentage	Assumed 10%, sensitivity analysis was undertaken at 10%, 20% and 30%. See Section 1.9.2. It is assumed that ECOSOL services the sumps and desilts regularly to maintain minimum sedimentation build up within the sumps (with correct disposal).
Catchment run-off	Catchments are either made up of concrete or well compacted earth, covered by metal spoils.
Sump starting levels	Initial estimate of 50% and 75% for the Shredder Yard Sump. A sensitivity analysis was undertaken (See Section 1.9.2. Indicating that the starting level of the sumps has little effect on the overall model results.
Car wash loses	A conservative estimate of 0% was used as water lost to the system. A sensitivity analysis was undertaken (see Section 1.9.2)

1.9 Model results

The WBM was used to simulate the current operation of the InfraBuild water management system based on the initial inputs and assumptions outlined in Section 1.8. The results of the current system operation are presented in Section 1.9.1 below. A sensitivity analysis was then undertaken on key parameters to understand the relative impacts of each parameter on the modelling results. The results of the sensitivity analysis are summarised in Section 1.9.2.

1.9.1 Current system operation

The WBM was used to determine the probable frequency and annual total volume of overflows to Iron Bark Creek. Insufficient data was available to calibrate the rainfall-runoff model. The results based on current operations and initial assumptions as per Section 1.8 are summarised in Table 9.

Table 9 Results – current system operation

	Probability			
	10%ile	Mean	90%ile	95%ile
Shredder Yard Sump Initial Volume 75% FULL				
Uncontrolled Overflows (Days per year)	0	0	0	0
Uncontrolled Overflow volume (m ³ /year)	0	0	0	0
Internal Roadway Sediment Pit Initial Volume 50% FULL				
Uncontrolled Overflows (Days per year)	41	86	148	159
Uncontrolled Overflow volume (m ³ /year)	205.5	1309	3892	5465
Non-Ferrous Facility Sump Initial Sump Volume 50% FULL				
Uncontrolled Overflows (Days per year)	0	3	9	13
Uncontrolled Overflow volume (m ³ /year)	0	254.3	1966	2401

1.9.2 Sensitivity analysis

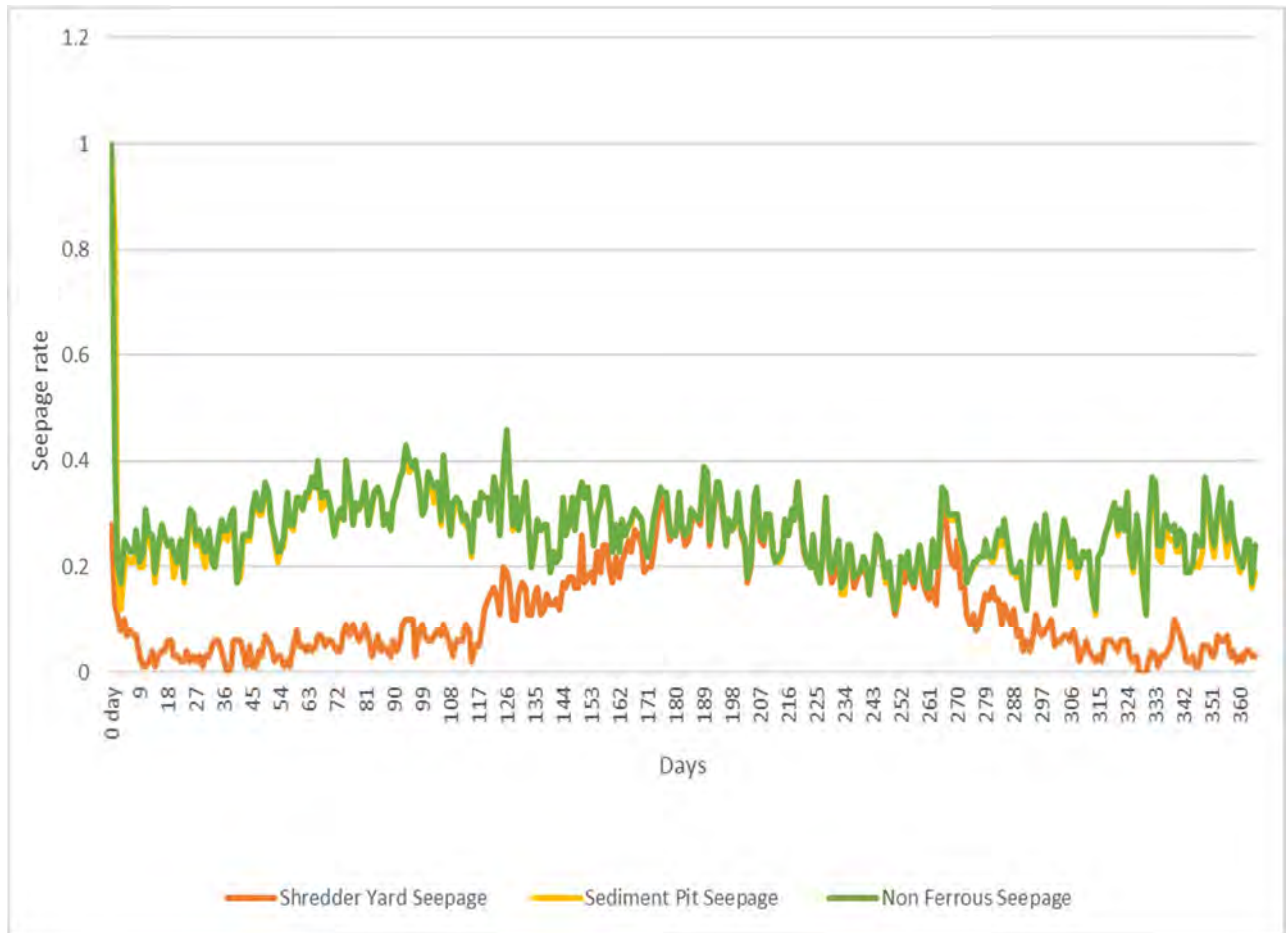
Table below present the WBM sensitivity analysis undertaken in this study.

Table 10 Summary of model sensitivity analysis results

Parameter	Sensitivity results and comments
Starting level	The model was run for current operations using an assumed starting level of 75% for the Shredder Yard Facility and 50% for the Sediment Pit and Non Ferrous Facility changing the starting level of the sumps had a small effect with up to a days change over the year on the uncontrolled flows for the Non-ferrous Yard and Sediment Pit. However, it had a greater effect on the Shredder Yard Sump which had a lower

Parameter	Sensitivity results and comments
	number of overflows as the starting volume was dropped below full capacity. A starting water level of 75% capacity was considered suitable.
Pond siltation percentage	The model was run for current operations using a 10% siltation of the pond. Changing this variable to 20% and 30% resulted in minor effects up to 15% on the volume of overflows but the number of days was increased by a day.
Seepage	The sensitivity analysis showed that changing the seepage from zero to 1m ³ /day had very little effect on the frequency of overflows.
Car and truck wash use	The model was run excluding the inputs from the car wash and truck wash facilities. There was no significant effect with the removal of the car and truck wash facilities.
Catchment areas	The model was run excluding the catchment areas that report to each sump. This had a significant effect on all three sumps. Sump overflows are heavily dependent on catchment runoff. Whilst there was a significant reduction in the number of overflows to the non-ferrous facility sump, the overflows are dependent on both catchment runoff and track wash operations.

The sensitivity analysis confirms that the WBM is most sensitive to catchment contribution for all sumps. The truck wash facility operations do have a notable effect on the Non-Ferrous Sump. Changes in seepage alters the volume of overflow. However, there has been no indication from site that seepage is an issue, therefore will be retained at 0 m³/d. A graph of the seepage increase is depicted in Figure 6.

**Figure 12 Seepage overflow**

1.9.3 EPA Compliance

In response to a letter from the EPA dated 8 July 2020 (EPA Ref: DOC20/552758), further assessment of the size of the sumps has been considered to meet the required criteria: Section headed 'Relevant sediment guidelines'.

In accordance with ANZG (2018), the ANZECC (2000) guidelines are to be used if site-specific catchment or regional default guideline values (DGVs) have not yet been derived. The aim, therefore, should be to achieve:

For controlled discharges, relevant sediment criteria e.g. 0.5-10 Nephelometric Turbidity Units (ANZECC 2000) or, at a minimum 50mg/L TSS (Managing Urban Stormwater, Volume 2E performance for typical sediment basins managing sediment with no attached toxicants;

An appropriate managed overflow frequency for times when the above criteria cannot be met by a reasonable a feasible system design, e.g' managed overflow frequency set out in Managing Urban Stormwater Soils and Construction Volume 2E mines and quarries guidelines for design storm events are:

90th percentile 2-4 spills/year

95th percentile 1-2 spills/year

At source or in-line controls to minimise sediment losses in controlled discharges and managed overflows

The GoldSim model which is a replication of the operations on site was run iteratively to determine the proposed operation required to meet the following criteria

90th percentile 2-4 spills/year

95th percentile 1-2 spills/year

The results are based on proposed operations assumptions summarised in Table 11

Table 11 Model assumptions for proposed

Parameter	Assumption and comments – Current Operations	Assumption and comments – Proposed Operations
Groundwater seepage	Seepage was assumed to be negligible. This is represented in the model as zero for each sump.	Unchanged
Sump siltation percentage	Assumed 10%, sensitivity analysis was undertaken at 10%, 20% and 30%. See Section 1.9.2. It is assumed that ECOSOL services the sumps and desilts regularly to maintain minimum sedimentation build up within the sumps (with correct disposal).	Was 0% now 10%
Catchment run-off coefficients	Catchments are either made up of concrete or well compacted earth.	AWBM Model implemented rather than rational method
Sump staging levels	Initial estimate of 100%. A sensitivity analysis was undertaken (See Section 1.9.2. Indicating that the starting level of the sumps has little effect on the overall model results for the Sediment Pit and Non Ferrous Facility Sump, with some effects for the Shredder Yard Pit.	Initial level percentage Scrap Metal Yard – 75% Sediment Sump – 50% Non-Ferrous Facility – 50%
Car wash loses	A conservative estimate of 0% was used as water lost to the system. A sensitivity analysis was undertaken (see Section 1.9.2).	Unchanged

Parameter	Assumption and comments – Current Operations	Assumption and comments – Proposed Operations
Dust suppression – water reuse	No water reuse from sump for dust suppression	Applied for future consideration at a rate of 5mm/day when rainfall not occurring. In the event that rainfall is less than 5mm/day, a difference should be applied.
Recoverable dust suppression	Not considered originally	Assumed a recoverable dust suppression of 45% of water used for dust suppression
Pump rate from Non-Ferrous Sump	Considered at 60l/min	Increased to 220l/min

Shredder Yard Sump

The modelling of the Shredder Yard indicates that all outflows are via the pipe network and that there are no uncontrolled overflows. Piped overflows from the Shredder Yard Sump are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor. With no uncontrolled overflows there is no need for any additional water management procedures.

Internal Roadway Sump

The model does indicate that there are uncontrolled overflows from the Internal Roadway Sump. The resulting uncontrolled flows per year are provided in Table 9. The piped flows from the Sump and uncontrolled flows are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor, with flows from the Shredder Yard Sump.

Non-Ferrous Facility Sump

The model does indicate that there are uncontrolled overflows from the Non-Ferrous Sump. The resulting uncontrolled flows per year are provided in Table 9. In order to reduce the uncontrolled flows to 1-2 events in a 95% event, a number of options were considered. In order to optimise the system a proposed increase of pump rate from the 60l/min to 220L/min would be required and maintaining levels in the sump as low as practical along with use of the water for dust suppression over the area at a rate of (5mm/day-rainfall), in order to meet EPA release objectives i.e. reduce overflows to the required 1-2 spills per year, refer Figure 13.

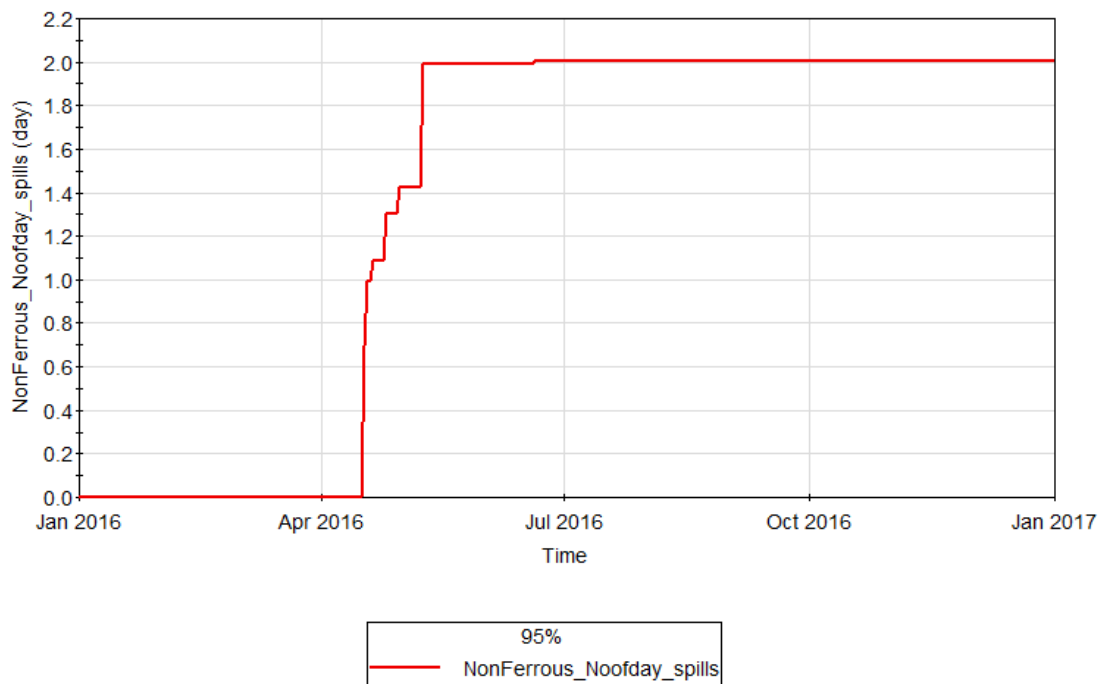


Figure 13 Number of Uncontrolled Flows for the Non Ferrous Sump

2.0 Conclusions

The conclusions drawn from the development of the WBM are:

- For the Shredder Yard Sump the operations and number of days of discharge is dependent on the operational capacity and the catchment runoff that reports to the sump.
- The Non-Ferrous Facility Sump and the resulting number of days of discharge is dependent on the catchment runoff with a reportable effect caused by changing the use of the truck wash facilities.
- The Internal Roadway Sediment Pit and the resulting number of days of discharge is dependent on the catchment runoff that reports to the sump, with a reportable difference with the use of the car wash facilities

Shredder Yard Sump

The modelling of the Shredder Yard indicates that all outflows are via the pipe network and that there are no uncontrolled overflows. Piped overflows from the Shredder Yard Sump are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor. With no uncontrolled overflows there is no need for any additional water management procedures.

Internal Roadway Sump

The model does indicate that there are uncontrolled overflows from the Internal Roadway Sump. The resulting uncontrolled flows per year are provided in . The piped flows from the Sump and uncontrolled flows are to Iron Bark Creek via a channel and pipe network along the western boundary alongside the railway corridor, with flows from the Shredder Yard Sump.

Non-Ferrous Facility Sump

The model does indicate that there are uncontrolled overflows from the Non-Ferrous Sump. The resulting uncontrolled flows per year are provided in . In order to reduce the uncontrolled overflows to 1-2 events in a 95% percentile, a number of options were considered. In order to optimise the system an increased pump rate from the 60L/min to 220L/min would be required and maintaining levels in the sump as low as practical along with use of the water for dust suppression over the area at a rate of (5mm/day-rainfall), in order to reduce overflows to the required 1-2 spills per year, refer Figure 13.

Limitations in the model

The model is limited by the information available. There are no flow meters used on site to validate the inputs and outputs from the model.

3.0 References

Boughton, W.J. (2004) The Australian water balance model, Environmental Modelling & Software, vol. 19, pp. 943-956

Burke Engineering Services Pty Ltd (2018) Remedial Stormwater Upgrade Sparkes Street, Hexham DWG 1 and 2

Eco Wastewater filtration, (January 2018), GPT Clean Report GoldSim 2018 User's Guide, June 2018

Queensland Government Department of Environment and Science, (July 2019), Silo Data Drill <https://www.longpaddock.qld.gov.au/silo/>, lat, long-32.85, 151.70

Appendix A

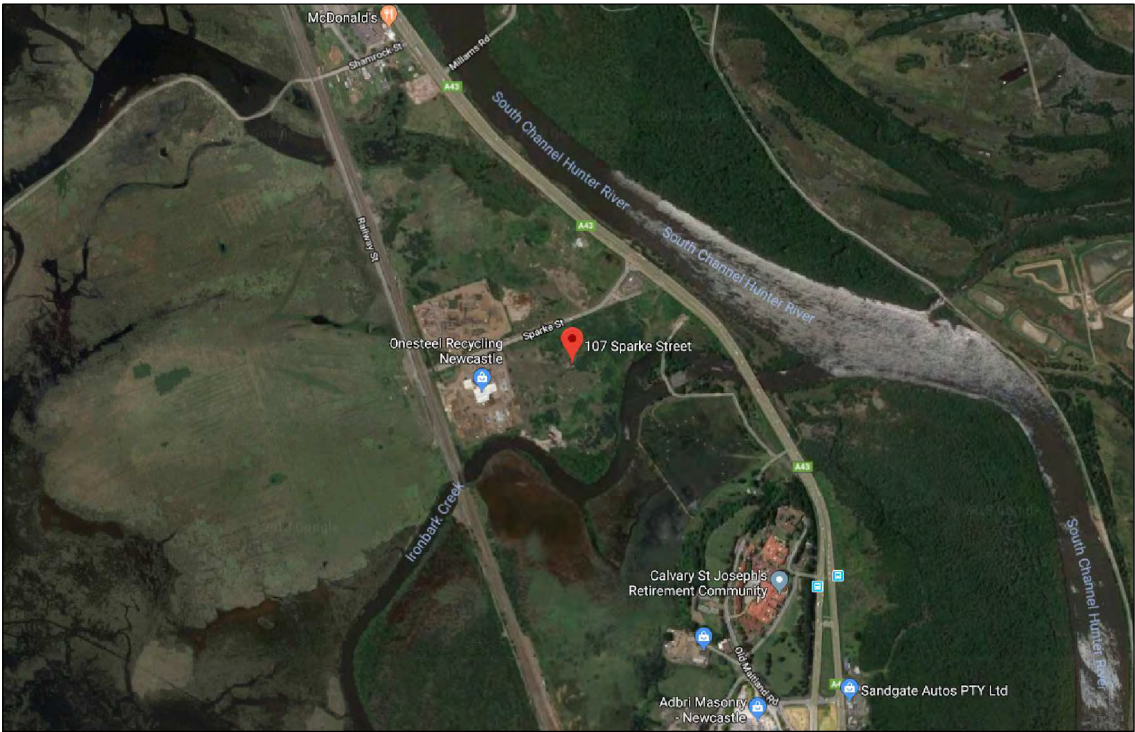
Site data

Appendix A Site data

LIBERTY ONE STEEL RECYCLING

STORMWATER DRAINAGE AND FIRST FLUSH SITE PLAN

107 SPARKE STREET HEXHAM NSW 2322



LOCALITY PLAN
NOT TO SCALE



LOCALITY PLAN
NOT TO SCALE

DRAWING INDEX	
DWG. No.	DESCRIPTION
7948-1	DRAWING SCHEDULE & LOCALITY PLAN
7948-2	OVERALL SITE PLAN
7948-3	GENERAL ARRANGEMENT - FLUSH PIT/GPTS
7948-4	GENERAL ARRANGEMENT HM YARD STORMWATER DETENTION
7948-5	PROPRIETARY PRODUCT SPECIFICATIONS

AMENDMENTS			
No.	Details	Date	Initial
A	PRELIMINARY ISSUE	17.05.18	SP



Scale	NTS
Date	17.05.18
Full Size	A1

Designed	AF
Drawn	SP
Checked	AF



Project Name	STORMWATER DRAINAGE AND FIRST FLUSH	Drawing No	7948-1
Client	LIBERTY ONE STEEL RECYCLING	Sheet	1 of 5
Drawing Title	107 SPARKE STREET HEXHAM NSW 2322 DRAWING SCHEDULE & LOCALITY PLAN	Revision	A

LIBERTY ONE STEEL RECYCLING

STORMWATER DRAINAGE AND FIRST FLUSH SITE PLAN

107 SPARKE STREET HEXHAM NSW 2322

OVERALL SITE PLAN



AMENDMENTS			
No.	Details	Date	Initial
A	PRELIMINARY ISSUE	17.05.18	SP



Scale	Designed
NTS	AF
Date	Drawn
17.05.18	SP
Full Size	Checked
A1	AF



Project Name	Drawing No
STORMWATER DRAINAGE AND FIRST FLUSH	7948-2
Client	Sheet
LIBERTY ONE STEEL RECYCLING	2 of 5
Drawing Title	Revision
107 SPARKE STREET HEXHAM NSW 2322 OVERALL SITE PLAN	A



AMENDMENTS			
No.	Details	Date	Initial
A	PRELIMINARY ISSUE	17.05.18	SP



Scale	Designed
NTS	AF
Date	Drawn
17.05.18	SP
Full Size	Checked
A1	AF



Project Name	Drawing No
STORMWATER DRAINAGE AND FIRST FLUSH	7948-3
Client	Sheet
LIBERTY ONE STEEL RECYCLING	3 of 5
Drawing Title	Revision
107 SPARKE STREET HEXHAM NSW 2322 GENERAL ARRANGEMENT - FLUSH PIT/GPTS	A



AMENDMENTS			
No.	Details	Date	Initial
A	PRELIMINARY ISSUE	17.05.18	SP

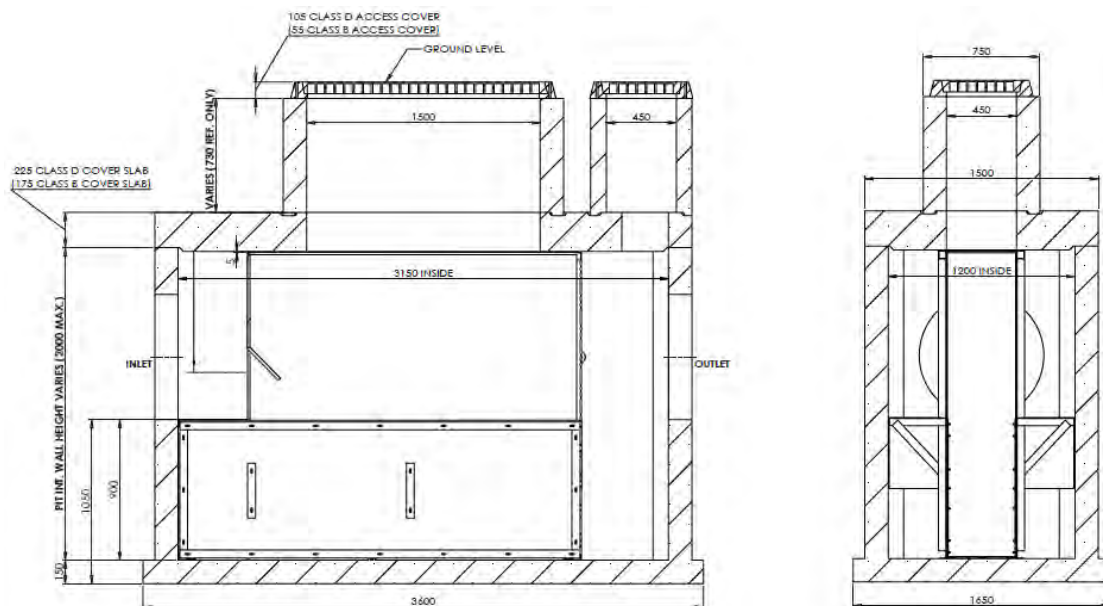


Scale	Designed
NTS	AF
Date	Drawn
17.05.18	SP
Full Size	Checked
A1	AF



Project Name	Drawing No
STORMWATER DRAINAGE AND FIRST FLUSH	7948-4
Client	Sheet
LIBERTY ONE STEEL RECYCLING	4 of 5
Drawing Title	Revision
107 SPARKE STREET HEXHAM NSW 2322 GENERAL ARRANGEMENT HM YARD STORMWATER DETENTION	A

Ecosol Gross Pollutant Trap Model 4450 (Quantity x 4)



The Ecosol GPT (in-line/end-of-line stormwater treatment solution) is a non-blocking tangential filtration system. Two unique systems have been designed, the Low Flow Ecosol In-Line GPT for primary and secondary treatment of stormwater at low flow velocities and the High Flow Ecosol In-Line GPT for primary treatment of stormwater at high flow velocities.

[Ecosol GPT Technical Specification](#)

[Ecosol GPT Maintenance Guide](#)

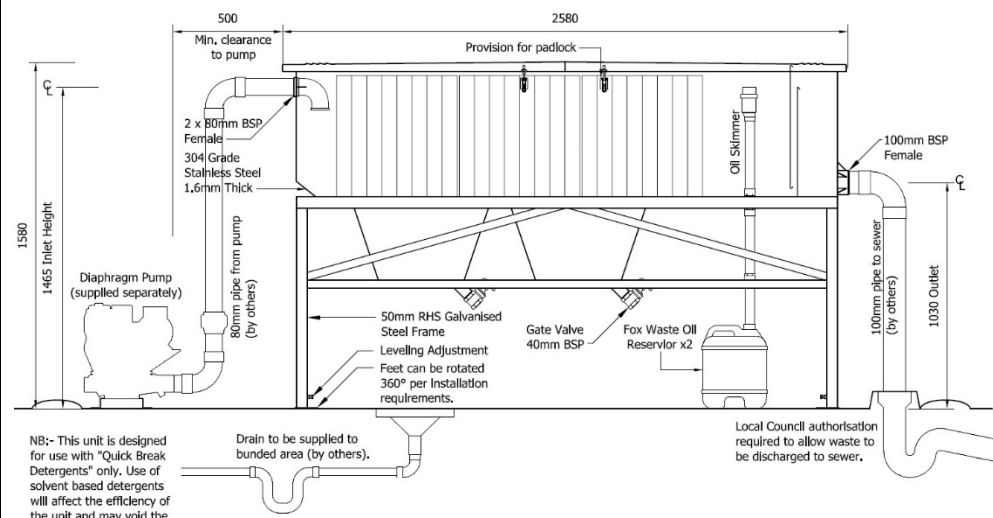
SPECIFICATIONS:

Material	Tank	Precast concrete
	Lid	Ductile iron solid top covers
	Internals	304 stainless steel and polyethylene oyster mesh
Treatable Flow Rate		260L/s
Holding Capacity	Solid Pollutants	0.103m ³
	Free Oil and Grease	1,347L
	Water	3,348L
Capture Efficiency	Gross Pollutants (>2000µm)	99%
	Total Suspended Solids (TSS)	55%
	Total Phosphorous (TP)	40%
	Total Nitrogen (TN)	40%
	Total Petroleum/Hydrocarbon	99% (FREE FLOATING/GREASE)

Pit No.	E1	E2	E3	E4
Pipe Size	750mm Ø	750mm Ø	750mm Ø	600mm Ø
Depth to Invert	1.100m	1.100m	1.100m	1.270m
Load Class	B (non-trafficable)	B (non-trafficable)	B (non-trafficable)	D (trafficable)



The Fox Oil/Water Separator Model FX10000SS (Quantity x 1)



The Fox Series FX separators are enhanced gravity separators and incorporate a Bio-Tube® filtration media pack to promote coalescing of oil droplets and enhance floatation separation from the water in accordance with Stokes Laws. The design of the tube pack offers a large surface area for the interruption of flow through the unit with the spiral construction of the tube promoting an upward flow of oil particles.

SPECIFICATIONS:

Material	Tank	1.6mm 304 stainless steel
	Lid	1.2mm 304 stainless steel
	Stand	25mm RHS Galvanised
Maximum flow rate		10000 litres per hour
Actual flow rate		7500 litres per hour
Pump type		Diaphragm
Separation process		Enhances gravity
Coalescing medium		Vertical tube pack
Volume		1900 litres net
Polishing Filter		100 micron bag
Inlet		2 x 800mm BSP
Outlet		100mm BSP Female
Gate Valve		40mm BSP

[FOX Environmental Systems](#)



Project Name
STORMWATER DRAINAGE FIRST FLUSH
Client
LIBERTY ONESTEEL RECYCLING
Drawing No.
107 SPARKE STREET HEXHAM NSW 2322
PROPRIETARY DEVICE SPECIFICATION

Assumptions

29/10/2020

Shreddar Yard Sump

	Inputs	Outputs	Operating Transfer Rules	Volumes / Levels	Catchment Area	AECOM Comments	Please Confirm Client Approval Required
First Flush Pit	Catchment Runoff				Adjusted 2.31ha (originally assumed 2.56ha)		2.31ha Email 20201124
First Flush Pit				1120m3 (Width 20m, length 20m, depth 2.8m)			
First Flush Pit			Operating level at 600m3 of storage before pipe flow begins (or 1.4m)			14% left for sediments	600m3 Email 20201124
First Flush Pit							Email 20201124 "Operating level/capacity: suggest we adopt the design storage of 600m3 on the design documents belows - this means operating level must be 1.4m above the bottom of the pit rather than 400m based on a total depth of 2.8metres"
First Flush Pit		Pipe - controlled overflows	Please confirm spillway level (pipe IL)	1.4m		600m3 used on GoldSim model	
		Pipe IL	Please confirm operating size of pipe				Email 20201124 "I was not able to ascertain the spillway"
Mill Water Storage			From First Flush Pit to Mill Water Storage 60l/min 11hrs a day 6 days when water available				Email 20201124 Agree with all other assumptions
Mill Water Storage				Mill water storage - 74.5m3			Email 20201124 Agree with all other assumptions
Mill Water Storage		Mill water usage	Mill water injection pump is maximum 141L/min, forced through 4x12mm nozzles approx. 120l.min at 40% average:				Email 20201124 Agree with all other assumptions
Mill Water Storage		Mill water usage	<20 degrees and rainfall >=5mm/day - 24l/min - cold rainy day				Email 20201124 Agree with all other assumptions
Mill Water Storage		Mill water usage	>=20 degrees and temp <23 degrees rainfall >2.8mm/day 48L/min - average day				Email 20201124 Agree with all other assumptions
Mill Water Storage		Mill water usage	>=23 degrees and temp <25 degrees rainfall >=2.8mm/day 72L/min - warmer day				Email 20201124 Agree with all other assumptions
Mill Water Storage		Mill water usage	>=25 degrees rainfall <2.8mm/day 120L/min - dry, warm day				Email 20201124 Agree with all other assumptions
			Assumption http://wilsonemi.com/wp-content/uploads/2016/07/Selecting-Industrial-Grade-Pressure-Washer.pdf (Light Duty Wash)				Email 20201124 Agree with all other assumptions
First Flush Pit	Dust Suppression					Assumed no dust suppression flows back to the sump	Email 20201124 Agree with all other assumptions
First Flush Pit		Dust Suppression				It was assumed that there is no usage of water for dust suppression	Email 20201124 Agree with all other assumptions
First Flush Pit						Operational dust suppression was looked at as an option to be applied to half of the site with a return of 40% of the water to the sump	Email 20201124 Agree with all other assumptions
First Flush Pit		Evaporation				Sourced from the Bureau of Meterology (BoM) Silo data drill	Email 20201124 Agree with all other assumptions
First Flush Pit						Evaporation Pan Factor 0.75	Email 20201124 Agree with all other assumptions
First Flush Pit		Seepage				Assumed that the sump is constructed of concrete and in a functional state with no cracks - seepage assumed to be zero	Email 20201124 Agree with all other assumptions

Mill Water Storage		Steam				All water lost as steam	Email 20201124 Agree with all other assumptions

Non Ferrous Facility							
	Inputs	Outputs	Operating Transfer Rules	Volumes	Catchment Area		Client Approval Required
Non Ferrous Facility Sump	Catchment Runoff				1.13ha		Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump		Non Ferrous Yard Sump		Non Ferrous Yard Sump Storage Volume 10x10x1.8=180m3			Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump				Non Ferrous Yard Pit Storage Volume 5m x 2m x 1m = 10m3			Email 20201124 Agree with all other assumptions
		Total		180m3			Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump	Truck Wash Runoff		Truck wash flow rate 22.7l/min				Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump			Truck wash frequency 30 per week				Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump			Wash down duration 5min				Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump			Wash down losses 30%				Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump			Assumption http://wilsonemi.com/wp-content/uploads/2016/07/Selecting-Industrial-Grade-Pressure-Washer.pdf (Extra Heavy Duty Wash)				Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump	Dust Suppression					Assumed no dust suppression flows back to the sump	Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump		Dust Suppression				It was assumed that there is no usage of water for dust suppression	Email 20201124 Agree with all other assumptions
						Operational dust suppression was looked at as an option to be applied to half of the site with a return of 40% of the water to the sump	Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump		transfer to settling tanks	60l/min maximum pump rate	Non Ferrous facility yard sump pump cuts in at 1000mm out at 300mm			Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump		Evaporation				Sourced from the Bureau of Meterology (BoM) SILO data drill - evaporation pan factor 0.75 or 75%	Email 20201124 Agree with all other assumptions
Non Ferrous Facility Sump		Seepage				Assumed that the sump is constructed of concrete and in a functional state with no cracks - seepage assumed to be zero	Email 20201124 Agree with all other assumptions
Settling Tanks				60m3 (30m3 each)		Diameter 4m x 2.4m in height V=30m3 EACH	Email 20201124 Agree with all other assumptions
Settling Tanks		Controlled Outflows	Unknown are			Are flows from the settling tanks via gravity?	

Sediment Trap							
	Inputs	Outputs	Operating Transfer Rules	Volumes	Catchment Area		Client Approval Required
Sediment Trap	Catchment Runoff				1.94ha		Email 20201124 Agree with all other assumptions

Sediment Trap				Sediment Trap storage volume 5x2.8x0.3=4.2m3			Email 20201124 Agree with all other assumptions
Sediment Trap	Car Wash Runoff		Car wash flow rate 22.7l/min				Email 20201124 Agree with all other assumptions
Sediment Trap			Car wash frequency 30 per week				Email 20201124 Agree with all other assumptions
Sediment Trap			Wash down duration 5min				Email 20201124 Agree with all other assumptions
Sediment Trap			Wash down losses 30%				Email 20201124 Agree with all other assumptions
Sediment Trap			Assumption http://wilsonemi.com/wp-content/uploads/2016/07/Selecting-Industrial-Grade-Pressure-Washer.pdf (Light Duty Wash)				Email 20201124 Agree with all other assumptions
	Dust Suppression					Assumed no dust suppression flows back to the sump	Email 20201124 Agree with all other assumptions
Sediment Trap		Dust Suppression				It was assumed that there is no usage of water for dust suppression	Email 20201124 Agree with all other assumptions
						Operational dust suppression was looked at as an option to be applied to half of the site with a return of 40% of the water to the sump	Email 20201124 Agree with all other assumptions
Sediment Trap		Evaporation				Sourced from the Bureau of Meterology (BoM) SILO data drill - evaporation pan factor 0.75 or 75%	Email 20201124 Agree with all other assumptions
Sediment Trap		Seepage				Assumed that the sump is constructed of concrete and in a functional state with no cracks - seepage assumed to be zero	Email 20201124 Agree with all other assumptions
Sediment Trap		Controlled Outflows	Gravity via 2x150mm pipes	IL 1.1m			Email 20201124 "Sediment trap assumption: Controlled outflows via 2 x 150mm UPV pipes (refer designs in the Water Balance Report for Sediment Trap)

ONE STEEL HEXHAM
STORMWATER QUALITY IMPROVEMENT DEVICE
GPT CLEAN REPORT - January 18



ASSET / INSPECTION DETAILS

ECOSOL REF NO.: 7164 INSPECTION DATE: 13/01/2018 INSPECTION TIME: 08:00
 ASSET NO.: GPT D TRAFFIC MAN.: No
 SQUID TYPE: RSF 4450
 SQUID LOCATION: Shredder Mill
 REPORT BY: Marc Whiting

VISUAL INSPECTION

ACCESS COVERS:
 ACCESS COVER SURROUNDS:
 SURROUNDING SURFACES:
 INTERNAL COMPONENTS:
 FLOATABLES VISIBLE:

GOOD	FAIR	DAMAGED	COMMENTS
			Steel Plate only
			N/A
✓		✓	
Yes	NO		

APPROXIMATE SOLID STORAGE CHAMBER DIMENSIONS

LENGTH: 2.250 m WIDTH: 0.450 DEPTH: 0.900 m APPROXIMATE VOL: 0.911 m³

APPROXIMATE HYDROCARBON/WATER CHAMBER DIMENSIONS

LENGTH: 2.250 m WIDTH: 1.350 DEPTH: 0.900 m APPROXIMATE VOL: 2.734 m³

APPROXIMATE VOLUME - SOLID POLLUTANTS

Inspection Measurements

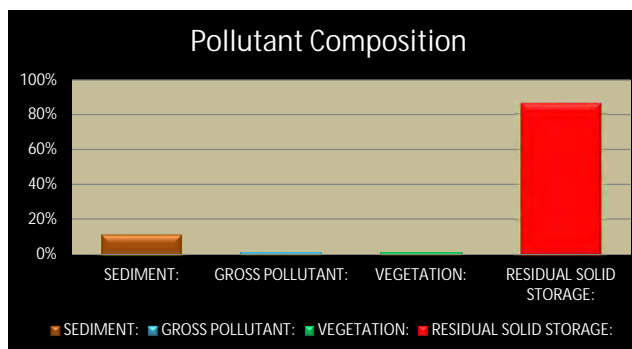
D1 0.750 m D2 0.800 m
 VOLUME: 0.1266 m³

APPROXIMATE SOLID COMPOSITION

	%	m ³ *	% of Volume
SEDIMENT:	11%	0.1013	80%
GROSS POLLUTANT:	1%	0.0127	10%
VEGETATION:	1%	0.0127	10%
RESIDUAL SOLID STORAGE:	86%	0.7847	

RESIDUAL SOLID STORAGE

TOTAL M3 0.785
 TOTAL Tonnes 1.099
 1.4 tonne = 1m³



APPROXIMATE PERCENTAGE OF EMULSIFIED HYDROCARBONS: 2% Schedule clean if more than 5%

COMMENTS

INLET / WEIR CHAMBER: N/A

OUTLET CHAMBER:

DEFECTS:

OTHER: Sediment, GP and vegetation present.

ACTION REQUIRED:

- A
- B
- C
- D
- E

*Priority - Low (L) / High (H)

PHOTOS

Photos only supplied at time of issue of clean report

ONE STEEL HEXHAM DETENTION POND (A) INSPECTION REPORT - NOVEMBER 18



ASSET / INSPECTION DETAILS

ECOSOL REF NO.: 8050 INSPECTION DATE: 14/11/2018 INSPECTION TIME: 09:30
 ASSET NO.: Detention Pond (A) TRAFFIC MAN.: No
 SQUID TYPE: N/A DISPOSAL SITE: N/A
 POND LOCATION: HEAVY METALS YARD
 REPORT BY: Marc Whiting

VISUAL INSPECTION

ACCESS COVERS:
 ACCESS COVER SURROUNDS:
 SURROUNDING SURFACES:
 INTERNAL COMPONENTS:
 FLOATABLES VISIBLE:

GOOD	FAIR	DAMAGED	COMMENTS
			N/A
			N/A
	✓		
			N/A
YES/NO		Yes	

APPROXIMATE DETENTION POND DIMENSIONS

LENGTH: 10.000 m WIDTH: 10.000 DEPTH: 1.800 m APPROXIMATE VOL: 180.000 m3

APPROXIMATE VOLUME - SOLID POLLUTANTS

Inspection Measurements

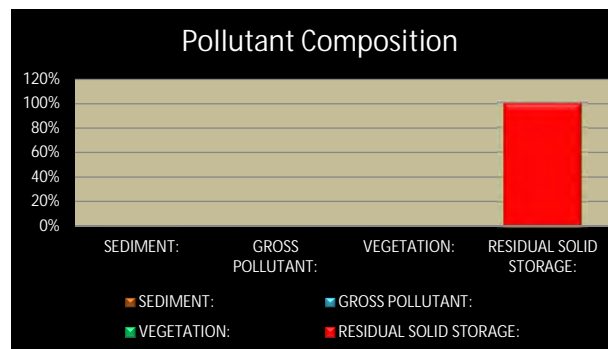
D1 1.790 m D2 1.790 m
 VOLUME: 1.0000 m3

APPROXIMATE SOLID COMPOSITION

	%	m3*	% of Volume
SEDIMENT:	1%	0.95	95%
GROSS POLLUTANT:	0%	0.00	0%
VEGETATION:	0%	0.05	5%
RESIDUAL SOLID STORAGE:	99%	179.00	

RESIDUAL SOLID STORAGE

TOTAL M3 179.000
 TOTAL Tonnes 250.600
 1.4 tonne = 1m3



APPROXIMATE PERCENTAGE OF EMULSIFIED HYDROCARBONS: 0% Schedule clean if more than 5%

COMMENTS

INLET / WEIR CHAMBER: N/A

OUTLET CHAMBER: N/A

DEFECTS:

OTHER: Minimal sediment with minimal vegetation floating on surface.

ACTION REQUIRED:

- A
- B
- C
- D
- E

*Priority - Low (L) / High (H)

PHOTOS

PHOTOS SUPPLIED AT THE TIME OF CLEAN ONLY

ONE STEEL HEXHAM
STORMWATER QUALITY IMPROVEMENT DEVICE
GPT CLEAN REPORT - OCTOBER 18



ASSET / INSPECTION DETAILS

ECOSOL REF NO.: 8050 INSPECTION DATE: 29/10/2018 INSPECTION TIME: 09:00
ASSET NO.: GPT A TRAFFIC MAN.: No
SQUID TYPE: RSF 4450
SQUID LOCATION: Shredder Mill
REPORT BY: Marc Whiting

VISUAL INSPECTION

	GOOD	FAIR	DAMAGED	COMMENTS
ACCESS COVERS:	✓			
ACCESS COVER SURROUNDS:		✓		
SURROUNDING SURFACES:		✓		
INTERNAL COMPONENTS:	✓			
FLOATABLES VISIBLE:	YES/NO			Yes

APPROXIMATE SOLID STORAGE CHAMBER DIMENSIONS

LENGTH: 2.250 m WIDTH: 0.450 DEPTH: 0.900 m APPROXIMATE VOL: 0.911 m3

APPROXIMATE HYDROCARBON/WATER CHAMBER DIMENSIONS

LENGTH: 2.250 m WIDTH: 1.350 DEPTH: 0.900 m APPROXIMATE VOL: 2.734 m3

APPROXIMATE VOLUME - SOLID POLLUTANTS

Inspection Measurements

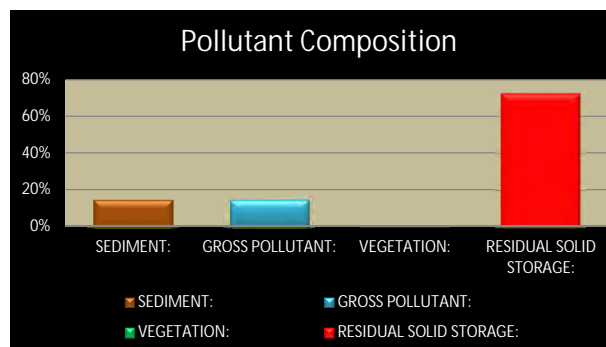
D1 0.650 m D2 0.650 m
VOLUME: 0.2531 m3

APPROXIMATE SOLID COMPOSITION

	%	m3*	% of Volume
SEDIMENT:	14%	0.1266	50%
GROSS POLLUTANT:	14%	0.1266	50%
VEGETATION:	0%	0.0000	0%
RESIDUAL SOLID STORAGE:	72%	0.6581	

RESIDUAL SOLID STORAGE

TOTAL M3 0.658
TOTAL Tonnes 0.921
1.4 tonne = 1m3



APPROXIMATE PERCENTAGE OF EMULSIFIED HYDROCARBONS: 25% Schedule clean if more than 5%

COMMENTS

INLET / WEIR CHAMBER: N/A

OUTLET CHAMBER:

DEFECTS:

OTHER: Upon inspection it was discovered that this unit again has a large quantity of thick oil. **REQUIRES CLEANING**

ACTION REQUIRED:

- A
- B
- C
- D
- E

*Priority - Low (L) / High (H)

PHOTOS

GENERAL

- These drawings shall be read in conjunction with other consultants drawings and specifications and with other such written instructions as may be issued. Any discrepancies shall be reported to the Engineer before proceeding with the work.
- Dimensions shall not be obtained by scaling. All dimensions shown shall be verified by the steelwork detailer.
- Any setout dimensions or those which tie into or relate to existing structures shall be verified on site by the builder.
- During construction the structure shall be maintained in a stable condition and no part shall be overstressed.
- All materials and workmanship shall be in accordance with the specification and relevant SAA Codes and the Building Code of Australia.

STORMWATER

- Catchment area: 15360 sq.m
- First flush volume based on 10mm runoff: 153.6 m3
- Sediment basin designed to retain 84% of particles greater than 80microns with average particle relative density of 2.65

FOUNDATIONS

- The contractor shall not place footing reinforcement or concrete without written certification from a suitably qualified Geotechnical Engineer that the design allowable bearing pressures have been achieved in the footing excavation. Design allowable bearing capacity: MIN 100 KPa.

EXCAVATION

- Any Vertical or near vertical permanent excavation within 2m of the building and greater than 0.6m deep in material other than rock shall be adequately retained or battered.
- Temporary excavations parallel to the footings shall only be carried out after giving due consideration to the following:
 - The stability of the soil
 - The need to maintain support for the footing
 - The need to maintain the necessary strength, compaction and permeability of the backfill.
- Where footings are placed near existing services to which future access will be required, consideration shall be given to the stability of the footing.
- Generally excavations shall not extend below the following limits without the consultation of an Engineer:
 - For a non-cohesive soil, a line drawn 30 degrees to the horizontal from the bottom edge of the footing.
 - For a cohesive soil, a line drawn 45 degrees to the horizontal from the bottom edge of the footing.
- Excavations near the edge of a footing system shall be backfilled with a method that prevents access of water to the foundations.
- Trenches for footings shall not be allowed to pond water for an extended period of time.
- Trenches shall be de-watered and cleaned prior to concrete placement so that no softened or loose material remains.

CONCRETE

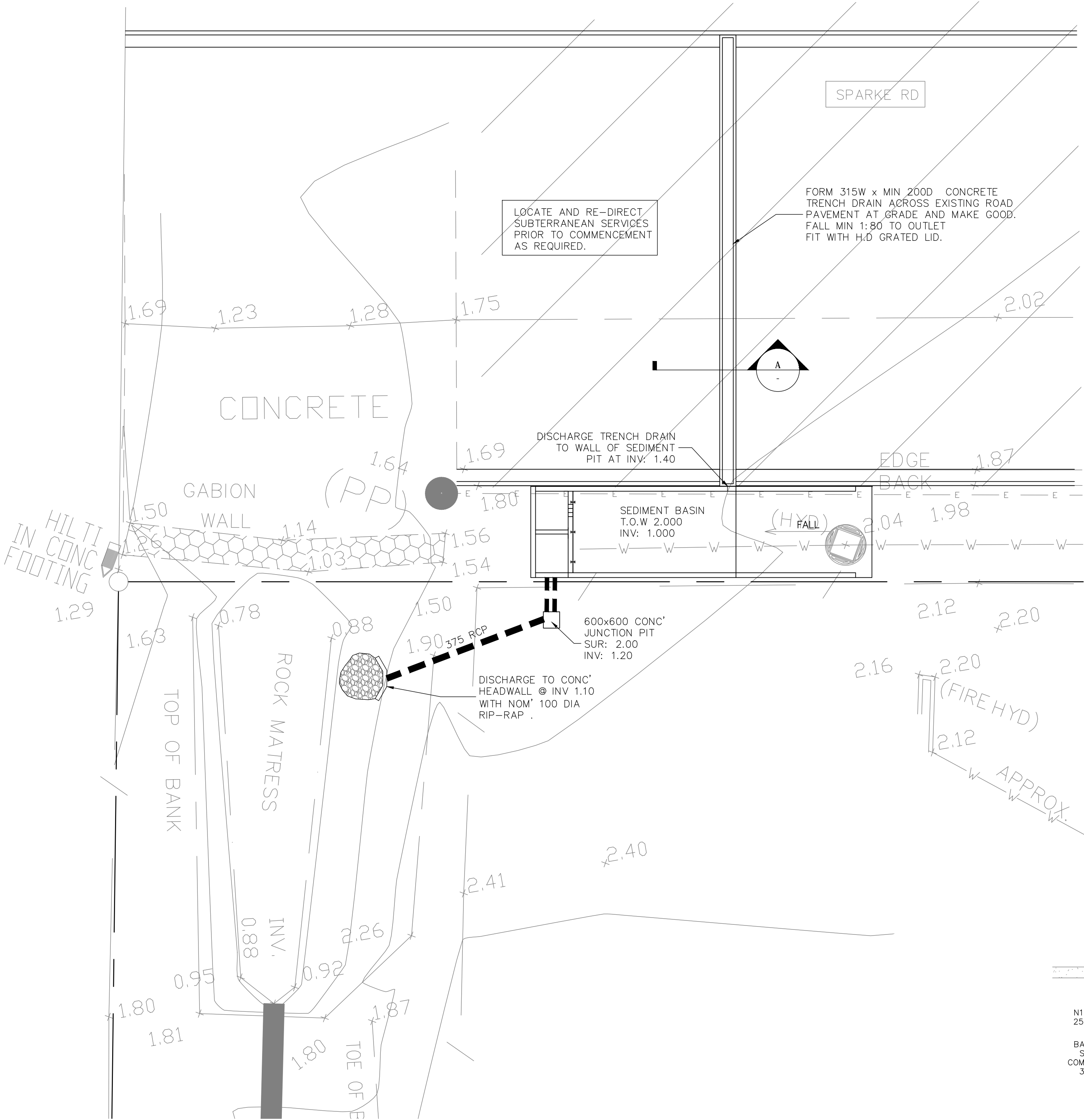
- All work shall be in accordance with AS3600 & AS3610.
- Concrete Schedule:

Element	Strength	Maximum Aggregate Size	Slump
UNO	32 MPa	20mm	80mm
Slabs	32 MPa	20mm	80mm
Pedestals	40 MPa	20mm	80mm
Footings	32 MPa	20mm	80mm

- Concrete Finish Schedule:
Concrete Finish - to AS3610
 - Formed Elements: CLASS 3
 - UNO CLASS 3
 - Kerbs, Walls, Pedestals, Plinths, Slab edges CLASS 3
 - Footings CLASS 4 or 5 as appropriateSurface Finishes:
 - UNO Machine Float or Steel Trowel as appropriate
 - Slab general areas Broomed or Wooden Float Finish
 - Construction Joints Scabbled to expose aggregate
 - Top of Pedestals & Plinths Steel Trowel
 - Top of Kerbs & Walls Steel Trowel

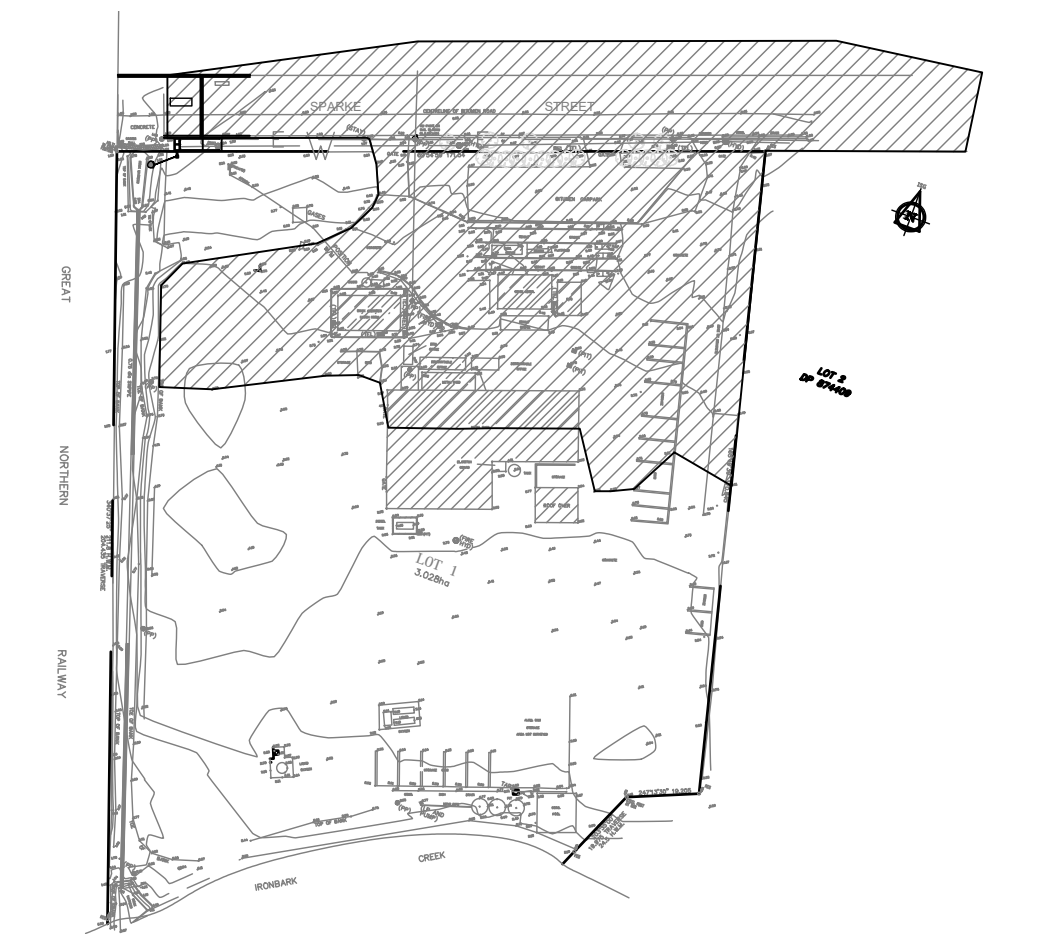
Description	Cover (mm)
Bored Piers	80
Footings	50
Ground Slabs	40 BTM , 40 TOP
Pedestals & Plinths	40

- All concrete shall be mechanically vibrated
- All concrete to be cured for a minimum of 7 days.
- Min compressive strength at completion of curing period 25MPa
- Curing methods suitable are:
 - Curing compound approved by the Engineer.
 - Impermeable plastic membrane that adequately seals the concrete from exposure and drying.
 - Continuous and total wetting of the concrete by spray, ponding or other means.
- Sizes of concrete elements do not include applied finishes
- Reinforcement sheet mesh shall be lapped so that two outermost transverse wires of one sheet overlap the two outermost transverse wires of the sheet being lapped.
- Reinforcement laps shall be a minimum of 500mm or 25 bar diameters (whichever is greater).
- Trench mesh shall be lapped 500mm or 25 bar diameters (whichever is greater)
- Welding of reinforcement is not permitted. "Tack" welding for fabrication is allowable. Care must be taken when "Tack" welding so that the integrity of the reinforcement is not compromised.
- Reinforcement is represented diagrammatically. It is not necessarily shown in its true position.
- Service penetrations are to be approved by the Engineer. Generally the penetration shall be taken into account by the provision of extra concrete depth and reinforcement.
- Penetrations in edge beams and footings shall be sleeved to allow for movement.
- Construction joints where not shown shall be to the approval of The Engineer.
- High impact resistant polyethylene membrane shall be provide under concrete slab lapped 200mm and taped at joints.



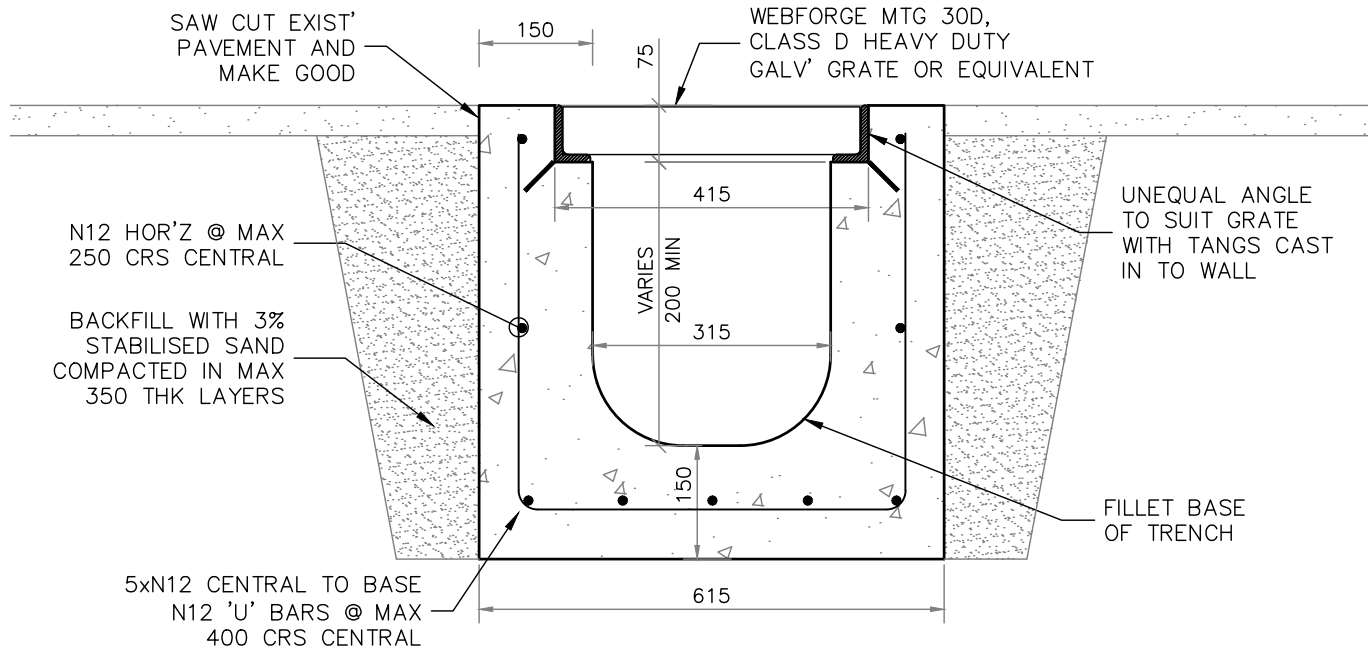
SETOUT PLAN

Scale: 1:100



LOCATION / CATCHMENT PLAN

Scale: 1:2000



SECTION A

TRENCH DETAIL 1:10

CERTIFIED STRUCTURALLY ADEQUATE

P. McDonald

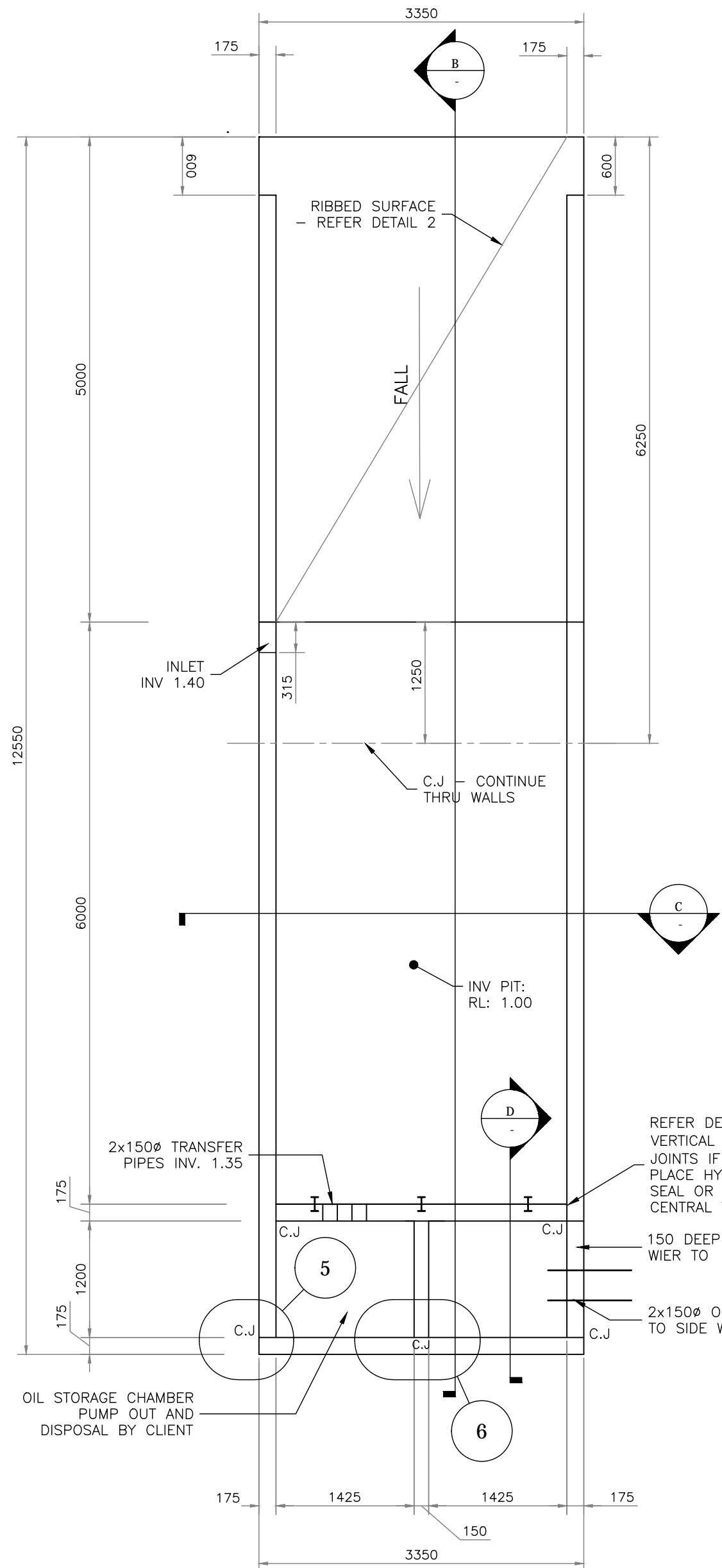
P. McDONALD. B.ENG(Civil). M.I.E.Aust
DIMENSIONS IN MILLIMETRES DO NOT SCALE

DATE	REV	ISSUE	DRAWN	APPROVED
21-05-18	2	CONSTRUCTION	PM	JB
10-04-18	1	PRELIMINARY	PM	JB
06-04-18	0	PRELIMINARY FOR REVIEW	PM	JB
DATE	REV	ISSUE	DRAWN	APPROVED

BURKE ENGINEERING SERVICES P/L
PO BOX 330 EAST MAITLAND, N.S.W. 2323, AUSTRALIA
TELEPHONE (02) 49 661511
FAX (02) 49 661711

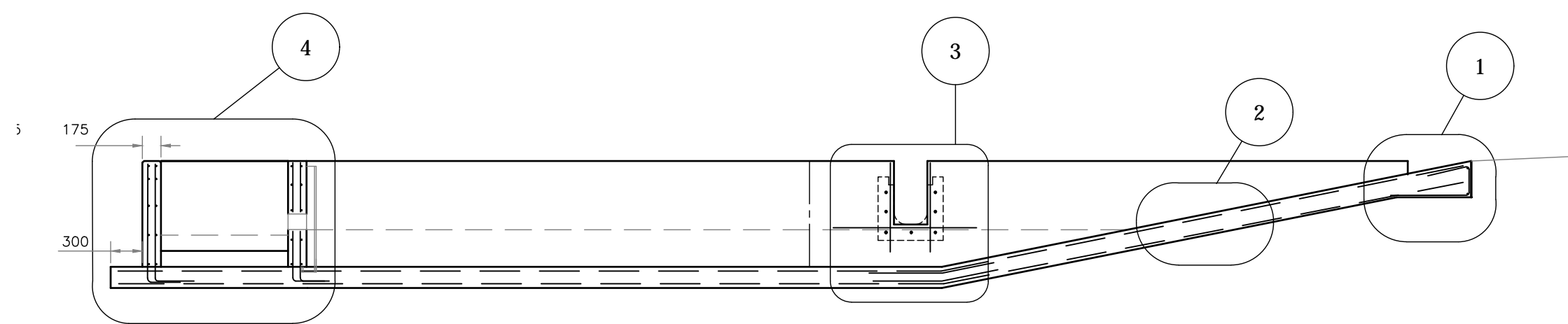
PROJECT: REMEDIAL STORMWATER UPGRADE
CLIENT: ONESTEEL RECYCLING
SITE ADDRESS: SPARKES ST, HEXHAM
DRAWING NAME: SITE PLAN & NOTES

SCALE	1:200, 1:20	DATE	21-02-18	REVISION NUMBER
DRAWN	PM	DATE	21-02-18	A3J2878 S01
CHECKED	JB	DATE	21-02-18	2
APPROVED	JB	DATE	21-02-18	REVISION NUMBER



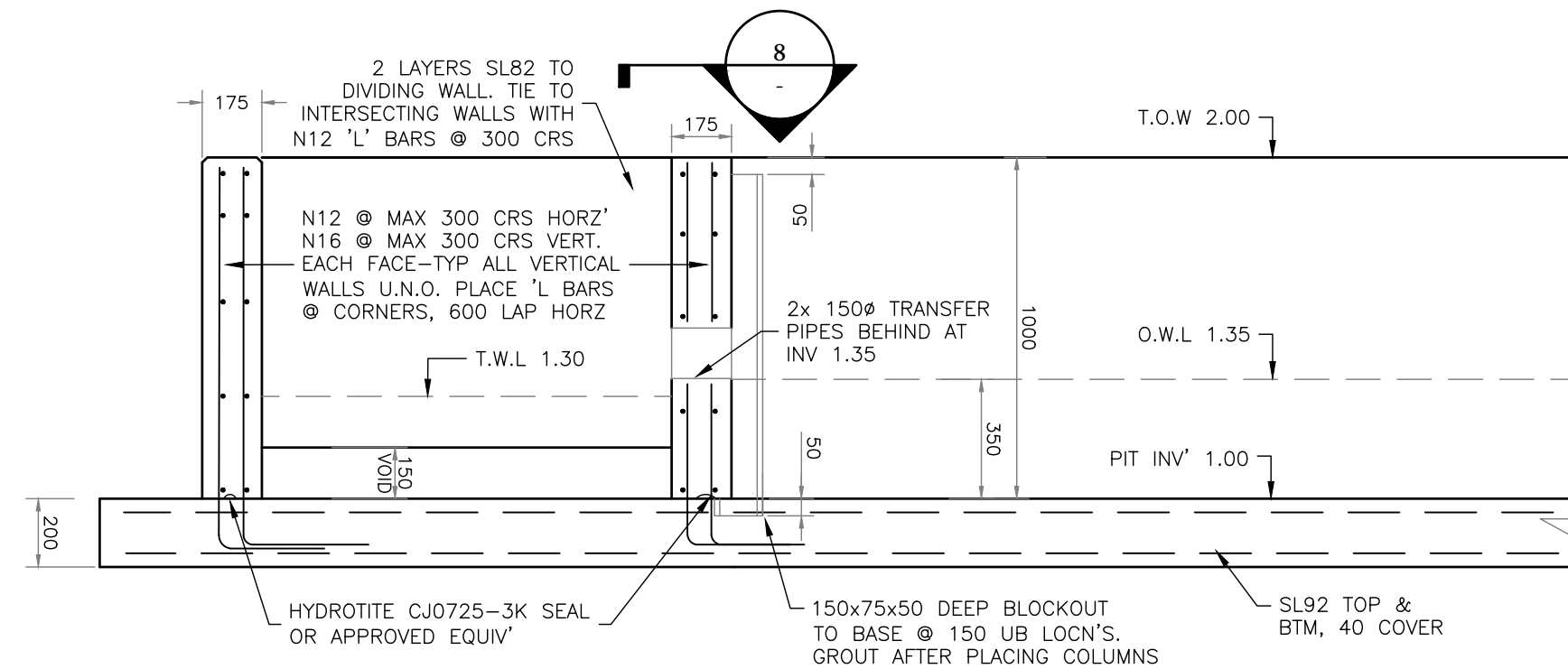
DRIVE IN SEDIMENT TRAP PLAN

Scale: 1:50



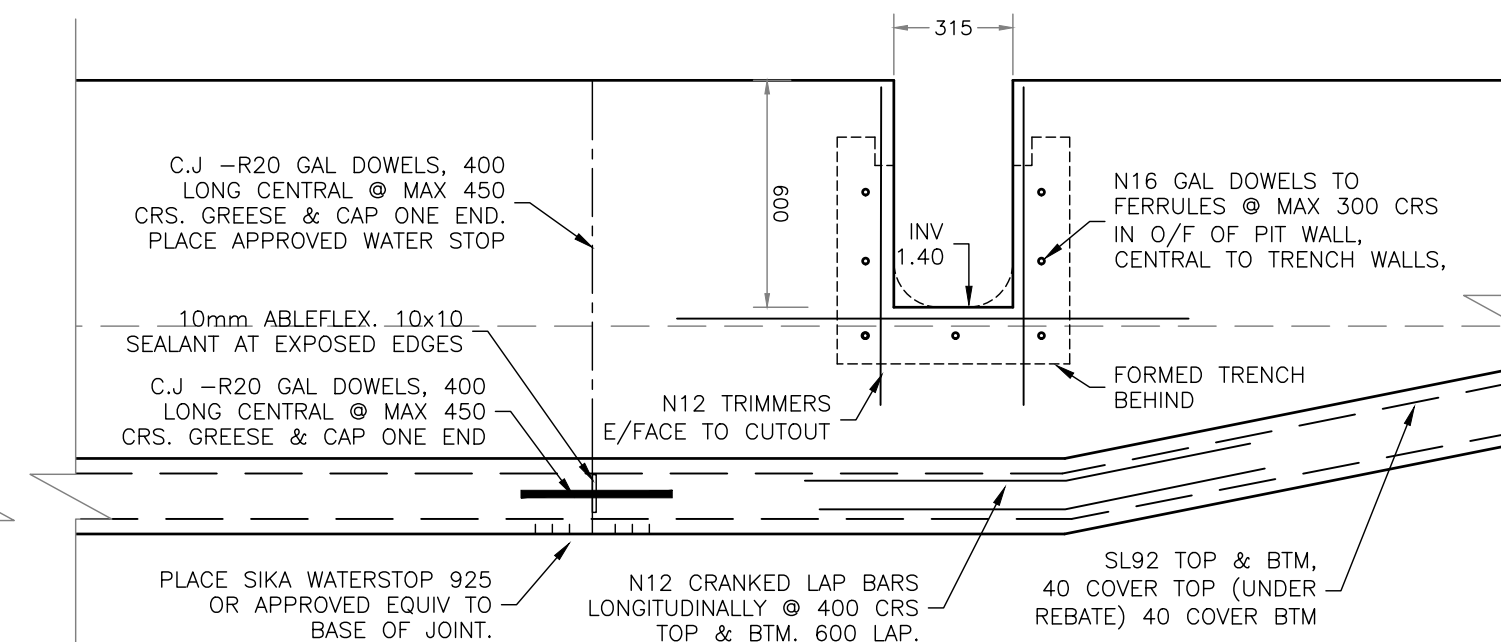
SECTION B

Scale: 1:50



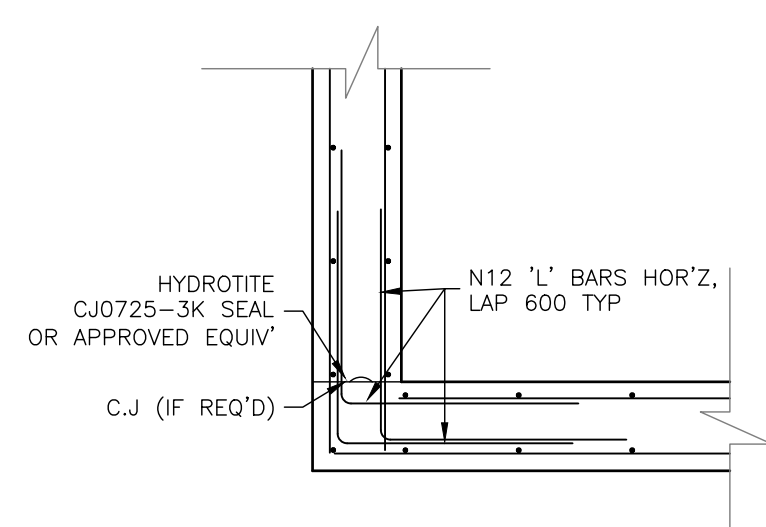
DETAIL 4

Scale: 1:20



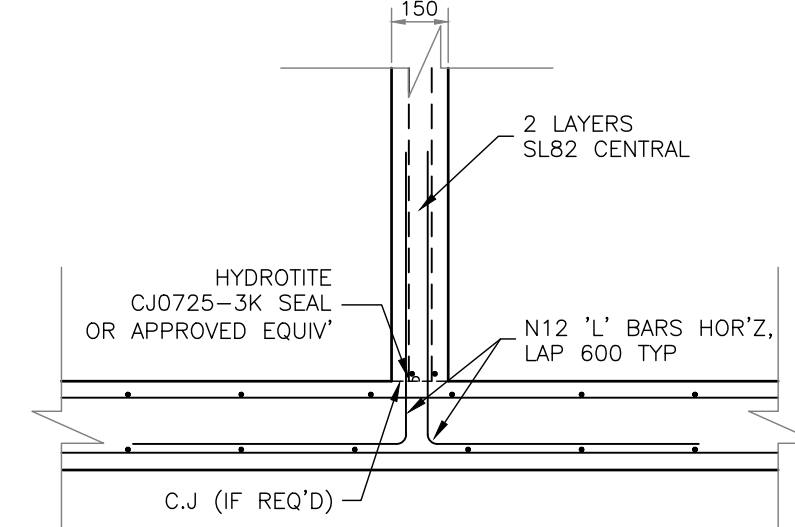
DETAIL 3

Scale: 1:20



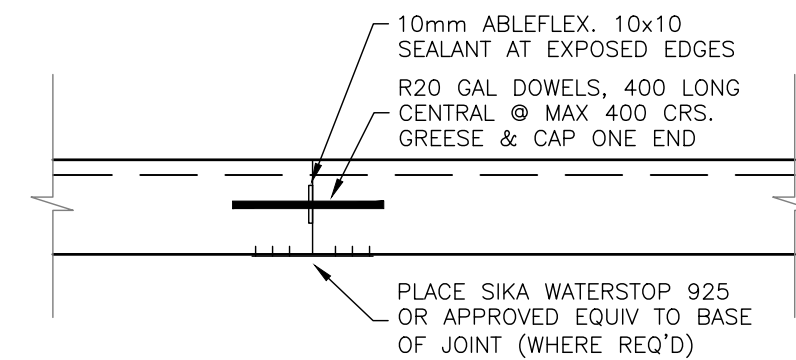
WALL CNR, DETAIL 5

Scale: 1:20



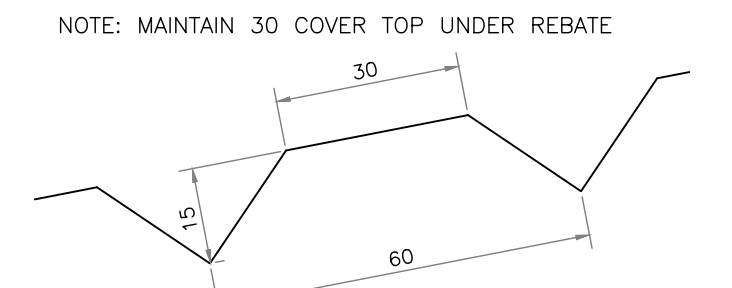
WALL 'T' DETAIL 6

Scale: 1:20



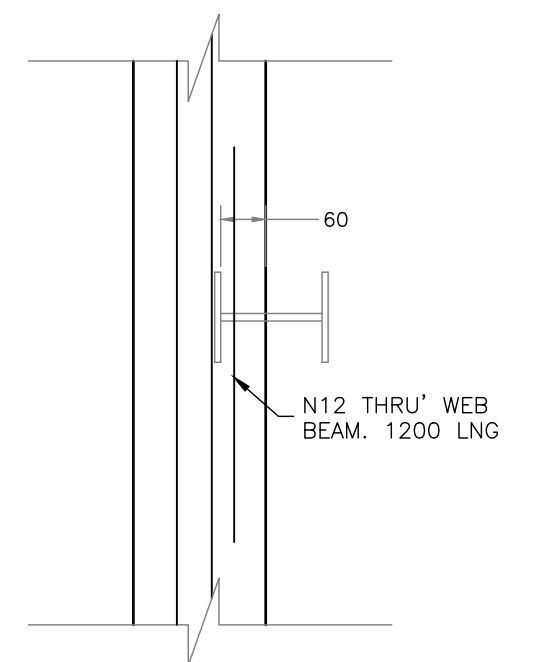
DETAIL 7

TYP. CONSTRUCTION JOINT IN GROUND SLAB.



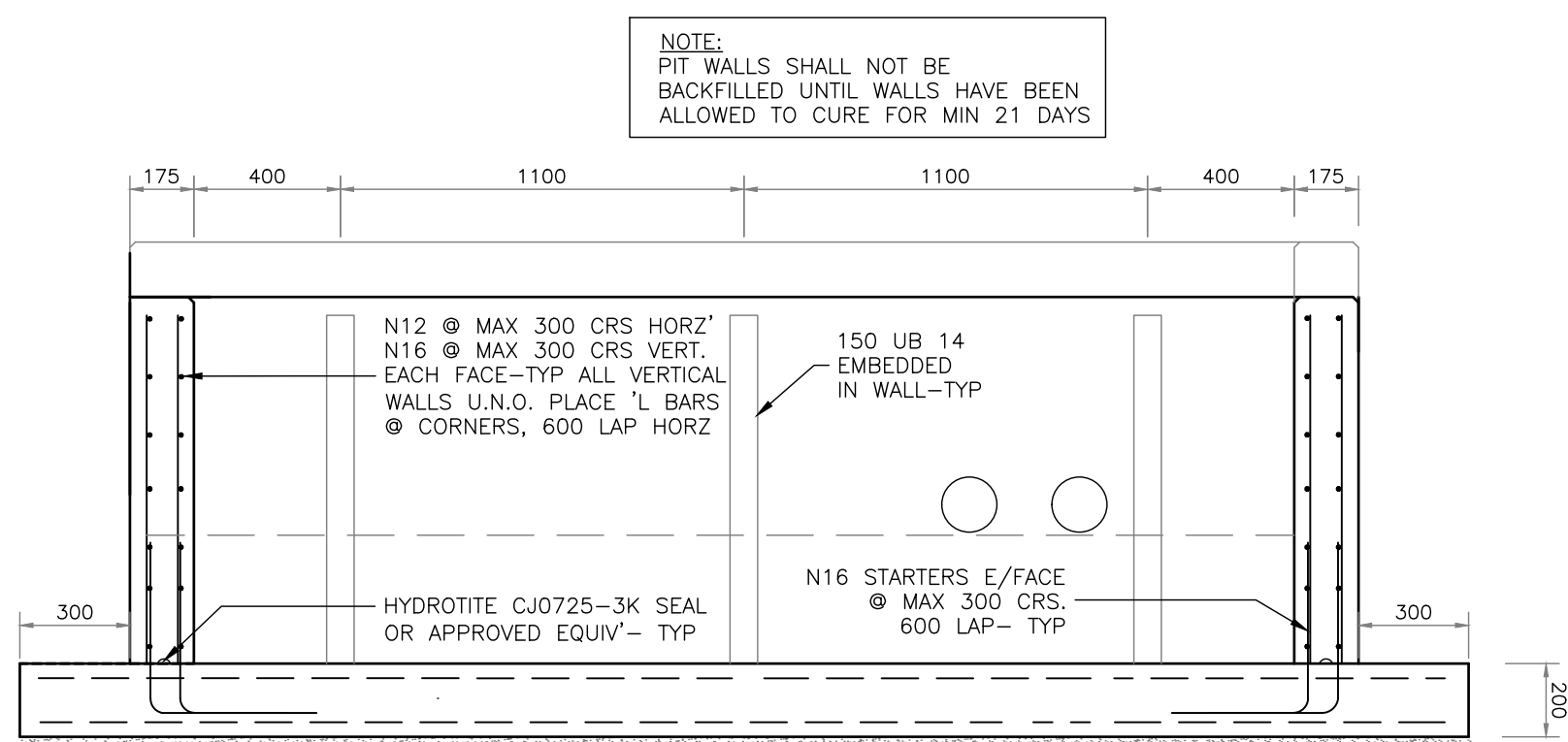
DETAIL 2

Scale: 1:10



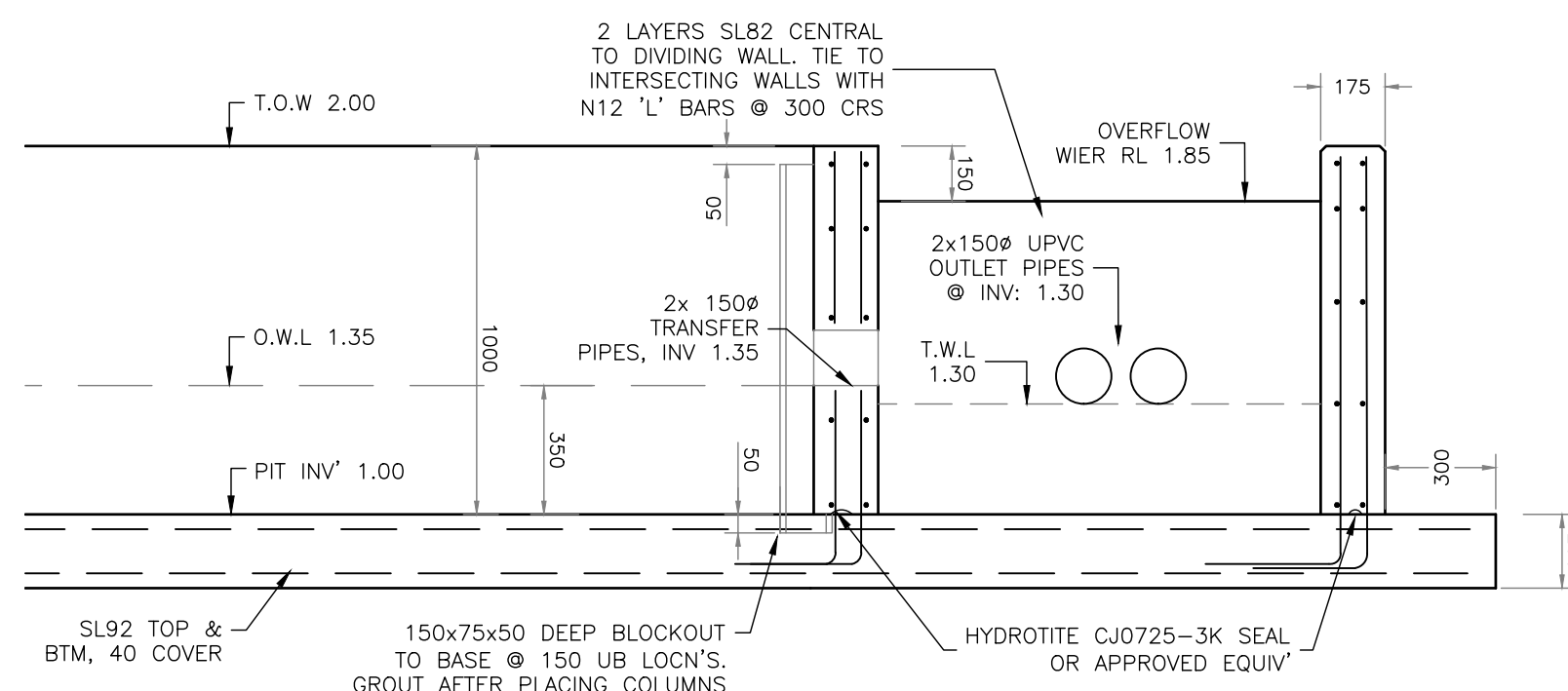
SECTION 8

Scale: 1:10



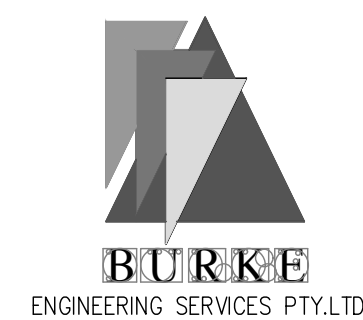
SECTION C

Scale: 1:20



SECTION D

Scale: 1:20



CERTIFIED STRUCTURALLY ADEQUATE

P. McDonald

P. McDonald, B.Eng(Civil), M.I.E.Aust

DIMENSIONS IN MILLIMETRES DO NOT SCALE

DATE	REV	ISSUE	DRAWN	APPROVED
21-05-18	1	CONSTRUCTION	PM	JB
06-04-18	0	PRELIMINARY FOR REVIEW	PM	JB
DATE	REV	ISSUE	DRAWN	APPROVED

BURKE ENGINEERING SERVICES P/L
PO BOX 330 EAST MAITLAND, N.S.W. 2323, AUSTRALIA
TELEPHONE (02) 49 661511
FAX (02) 49 661711

PROJECT: REMEDIAL STORMWATER UPGRADE
CLIENT: ONESTEEL RECYCLING
SITE ADDRESS: SPARKES ST, HEXHAM
DRAWING NAME: SEDIMENT PIT DETAILS

SCALE	1:200, 1:20	DATE	21-02-18	REVISION NUMBER
DRAWN	PM	DATE	21-02-18	A3J2878 S02
CHECKED	JB	DATE	21-02-18	1
APPROVED	JB	DATE	21-02-18	REVISION NUMBER

Appendix B

Site photos

Appendix B Site photos



Plate 1 Internal Roadway Sediment Trap



Plate 2 Ferrous facility sump



Plate 3 Engine turnings surface water ponding



Plate 4 Non-ferrous facility first pit to first flush



Plate 5 Non ferrous facility sump

Appendix C

Infrabuild Dust Mitigation Response

Appendix C Infrabuild Dust Mitigation Response

30 January 2020

STEVEN JAMES
UNIT HEAD WASTE COMPLIANCE
WASTE & RESOURCE RECOVERY

Dear Steven,

RE: Revised Hexham Dust Mitigation Report

This report is prepared in response to the notice of variation of licence dated 28 March 2019 and the licence variation dated 7 August 2019 concerning the preparation of a Dust Mitigation Report (Attachment 1). The purpose of the Dust Mitigation Report was to submit to the EPA a timetable for the selection and implementation of mitigation measures identified in the Dust Mitigation Study (Attachment 2). The Dust Mitigation Study (Condition U3.1) was prepared by AECOM submitted to EPA on the 2nd of September 2019.

Table 1 lists the priority mitigation options identified in the AECOM Dust Mitigation Study as well as initiatives undertaken by InfraBuild independently of the AECOM findings.

Table 1 – Summary of Dust Mitigation Actions, InfraBuild Recycling, Hexham (Revised)

Dust Mitigation Actions	InfraBuild Status	Delivery
1. Reduce the amount of impurities in the scrap being delivered to Site (AECOM Dust Study Recommendation)	Continued enforcement of existing company policies to limit acceptance of loose non metallics.	Ongoing enforcement by InfraBuild
2. Increase frequency and number of existing dust deposition monitoring location & consideration of additional dust deposition monitoring locations (AECOM Dust Study Recommendation)	Relocate two existing dust monitors closer to sensitive receptors (Maitland Road and residences near Shamrock St)	Ongoing Dust monitoring by AECOM
3. Road sweeping in combination with water cart to limit airborne dust generated by the sweeper (AECOM Dust Study Recommendation)	Use of contract sweeper and purchase of new water cart.	Ongoing use by InfraBuild
4. Reactive mitigation measures during conditions prone to high dust generation (AECOM Dust Study Recommendation)	This specific action duplicates proposed actions which are responsive to climatic conditions.	Ongoing responsibility of InfraBuild. Refer Actions 3, 5 and 10
5. Improved general house-keeping (AECOM Dust Study Recommendation)	General dust management measures as outlined in the Operational Environmental Management Plan	Ongoing responsibility of InfraBuild

6. Tree planting (InfraBuild initiative)	Installation of 266 semi-advance native evergreen species on northern and eastern boundary	Completed
7. Concrete hardstand in non-ferrous and HM yard	Installation of an additional 3,100 sqm of hardstand to reduce dust emissions	Completed
8. Ongoing community engagement with local community	Continued consultation with the local community on site operations	Ongoing
9. Online reporting of environmental performance	Continued reporting of dust, noise and environmental monitoring results	Ongoing
10. Dust suppression measures on metal shredder mill	Installation of new dust and smoke control measures on the shredder mill	Completed
Response to AECOM Dust Study Undertakings on pg 8:		
11. Concreting to improve surface around mill in the shredder yard	Reduce dust generation and allowing efficient cleaning/improved drainage	Ongoing
12. Covering of conveyor belts to reduce dust emissions	Installation of new conveyor covers	Pending
13. Upgrade of water spray systems	Replacement and upgrade of existing water spray systems	Pending
14. Installation of windsock	Wind direction/speed indicator to assist site operations	Pending

Detailed response to recommended actions

Action 1 - Reduce the amount of impurities in the scrap being delivered to Site

InfraBuild seek to place strict limits on the quantity of unacceptable scrap being loose, non-metallic items including:

- masonry, including rubble, bricks, concrete, stone, dirt
- rubber, including extra tyres, hoses, seals, foam
- compostable items, including timber, garden clippings
- plastic, including vinyl, polystyrene, packaging, pipe, hoses, carpet,
- sheet, components, fibreglass panels, insulation
- other, such as fabrics, glass, paper, cardboard, water.

These policies are applied nationally through the Unacceptable Scrap Manual and includes the requirement for financial deductions are to be imposed on customers to recover costs in handling, storing and responsibly disposing of excessive non-metallic material and unacceptable scrap. ¹

In addition, InfraBuild has recently adopted a national Car Acceptance Policy² to more effectively limit unacceptable waste in motor vehicles accepted at InfraBuild sites. Copies of both documents can be made available to EPA on request.

Action 2 - Increase frequency and number of existing dust deposition monitoring location/consideration of additional dust deposition monitoring locations (AECOM Dust Study Recommendation)

InfraBuild has undertaken due-diligence dust monitoring at the Hexham recycling site since the commencement of shredder operations in 2005. These results have been reported on a quarterly basis to the Hexham Shredder Community Consultation Committee (refer Action 8) as well as in recently years, the reports being placed online through the InfraBuild website (refer Action 9).

InfraBuild have recently commissioned an environmental risk assessment for the dust depositions reported by the neighbouring property at 33 Sparke St, Hexham which has highlighted the need to identify background concentrations of dust as well as better characterise concentrations at the nearest sensitive receptors being residences north of the site at Shamrock Street and Maitland Road to the east. A recent site inspection also revealed works by what appears to be the railway, to store rail ballast and construction materials immediately west of the site (refer Figure 1 and Figure 2).

As a consequence, InfraBuild has selected two dust monitoring locations on the InfraBuild site which will provide a representative samples of background concentrations as well as giving an indication of the impact of dust from the Hexham facility on sensitive receptors to the north and east of the site. The proposed location of the new monitoring locations is shown in the sketch plan at Attachment 3.

Action 3 - Road sweeping in combination with water cart to limit airborne dust generated by the sweeper (AECOM Dust Study Recommendation)

InfraBuild continue to operate a contract sweeper (Figure 3) for 10 hour per weekday (midday until 10pm) and have recently purchased a new water cart for dust suppression (Figure 4). The use of the water cart is on an as-needs basis and increases during dry-weather periods.

Action 4 - Reactive mitigation measures during conditions prone to high dust generation (AECOM Dust Study Recommendation)

This action is closely related to Action 3 (street sweeper/water cart usage), Action 5 (improved house-keeping) and Action 10 (dust suppression on shredder). All three actions are responsive to prevailing weather conditions and address the requirements of Action 4.

Action 5 - Improved general house-keeping (AECOM Dust Study Recommendation)

¹ Unacceptable Scrap Manual Version 3.3, OSTR-OHSE-PC-PRO-056, Authorised By: GM Australian Recycling, 22 Feb 2018

² Car Acceptance Policy Version 1, LRC-WHSE-PC-PRO-071, Authorised By: National WHSE Manager, 01/06/2019

The InfraBuild Operational Environmental Management Plan³ is a requirement of the development consent (Condition 7.4 of DA No. 345-7-2003-i) and has general provisions for control of dust that are applicable to maintaining general housekeeping in good order. The provisions also meet the DA conditions 4.29 and 4.30 which relate to the control of dust on the site (Attachment 4).

Action 6 – Tree planting

InfraBuild have installed over 200 semi-mature trees around the eastern and northern boundary of the property with the view of screening the site and limiting the movement of dust off-site. It is expected this mitigation measure will become more effective as the trees establish and mature (Figure 5 and Figure 6). Full details of the planting schedule and species used is provided at Attachment 5.

Action 7 – Additional Concreting

Since receiving the notice of variation and licence variation, InfraBuild has laid an additional 3,100sqm of new concrete in the high traffic and bunker storage areas of the non-ferrous and heavy metal yard adjacent to the 33 Sparke St property (Figure 7 and Figure 8). It is expected that this will reduce the amount of dust generated in this area and impacting the neighbouring property. A copy of the survey plan confirming the laying of concrete hardstand in this area is provided at Attachment 6.

Action 8 – Community engagement

InfraBuild continues its long-standing commitment to community consultation with meetings held quarterly at the local bowling club and attended by residents living near the facility. Dust monitoring results as well as overall environmental performance are discussed at these meetings. A copy of the most recent minutes from June 2019 is provided at Attachment 7.

Action 9 – Online reporting

InfraBuild have been reporting dust results online for several years as part of its community consultation obligations and intends to continue to do so. The documents can be found via the InfraBuild website under “Resources” and “Environmental Reporting”.⁴

Action 10 – Dust suppression on shredder

InfraBuild has recently introduced new dust-control measures on the shredder in order to minimise the dust and smoke being emitted from the operating plant. A dust-suppression compound shown in Figure 9 now has the effect of significantly reducing the amount of smoke and dust during shredder operations with the quantity used being varied depending on the material being processed. Figure 10 shows the operation of new water jets installed on the drum magnet which significantly reduces dust generation during dry-weather periods.

³ Operation Environmental Management Plan, Shredder Plant Operation –Hexham – NSW, Issue No. 2, April 2005

⁴ Link: https://www.infrabuild.com/en-au/resource-centre/environmental/?q=&hPP=1000&idx=gfg_prd_date&p=0&dFR%5BresourceEnvironmentalCategory%5D%5B0%5D=InfraBuild%20Recycling%20%28Hexham%29%20%E2%80%93%20Gas%20Discharge.

Action 11 – Additional Concreting Around Mill to Improve Surface

In response to dust complaints, InfraBuild has committed to replacing worn concrete surfaces around the mill and completed a 2,000 sqm section immediately south of the mill in November 2019 (refer Figure 11). Additional works on internal roadways east and north of the mill are planned for next financial year.

Action 12 – Covering Conveyor Belts to Reduce Dust Emissions

The AECOM Study identified the enclosure of the C6 conveyor as key mitigation measure to limit dust. InfraBuild is evaluating the practicability of enclosing this conveyor with a decision to be made before end-March 2020, which if supported will see works completed by end June 2020.

Action 13 – Upgrade of Water Spray System

Upgrade of the existing water spray system to deliver water more efficiently and effectively to dust-generating areas at Drum Magnet 1 and 2. It is anticipated it will be funded and completed by end June 2020 (this financial year).

Action 14 – Installation of Windsack

The business has agreed to the installation of a windsack in a prominent position visible to operators in both the HM and Shredder yards. It is expected this will be completed prior to end February 2020.

We trust this Dust Mitigation Report satisfies the requirements of Condition U3.2 of our licence and demonstrates the InfraBuild commitment to minimizing the impact of our operations on our neighbours and the environment. If you have any questions in relation to this Report, please contact me directly on 0408 328 471.

Yours sincerely

LESLEY HARPENG
Environment and Systems Manager



Figure 1 – Railway works west of the property



Figure 2 – Aerial view of railway works



Figure 3 – Contract Sweeper



Figure 4 – New Water Cart



Figure 5 – New Plantings Eastern Boundary – HM Yard



Figure 6 – New Plantings Eastern Boundary - Shredder



Figure 7 – New Concrete – HM Yard



Figure 8 – New Concrete NF Bunkers East Boundary

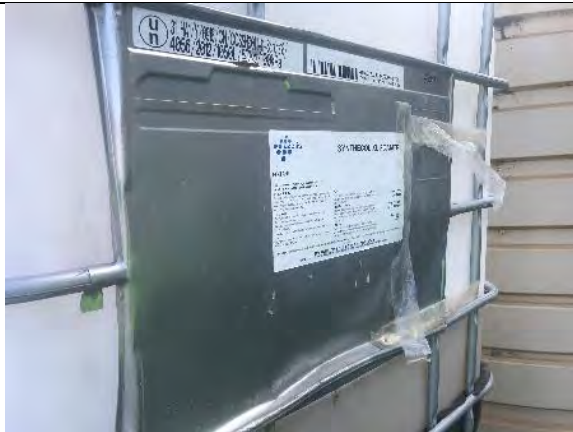


Figure 9 – Dust Suppression Compound used in Shredder



Figure 10 – Water Sprays installed in Drum Magnets



Figure 11 – Concreting works being undertaken in October 2019 immediately south of the Shredder

List of Attachments

Attachment 1 – EPA Draft Notice and Licence Conditions – Dust Emissions	9
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Attachment 3 – Proposed Dust Monitoring Locations – DG6 and DG7 circled red.....	11
Attachment 4 – Dust Obligations in InfraBuild OEMP	12
Attachment 5 – Tree planting specifications	13
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Attachment 1 – EPA Draft Notice and Licence Conditions – Dust Emissions

- H. Liberty Onesteel is required to maintain the Premises in a condition which minimises or prevents the emission of dust (condition O3.1) and to carry out all operations in a manner that will minimise the emission of dust from the premises (condition O3.2).
- I. Review of Liberty Onesteel's dust deposition monitoring, as reported in the Annual Environmental Management Reports (2014 - 2017) prepared by AECOM, indicate significant dust impacts at the boundary of the Premises.
- J. Site inspections by EPA Officers, along with dust complaints received from the community, also report airborne dust emissions migrating beyond the Premises boundary.
- K. The purpose of Condition U3 - Dust Mitigation Study, is to investigate and implement dust mitigation options, such that dust emissions from the Premises are prevented.

U3 Dust Mitigation Study

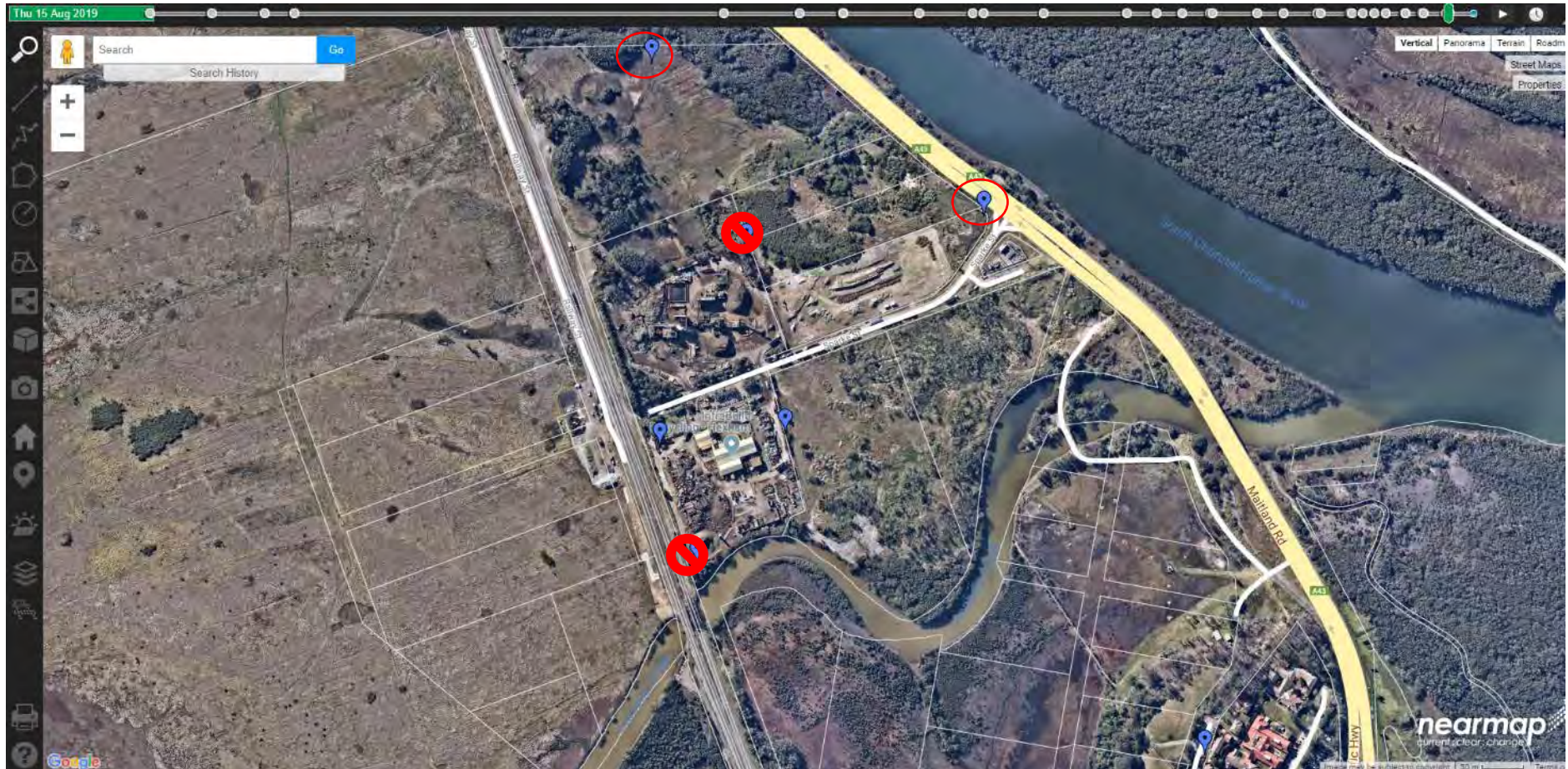
- U3.1 The Licensee must undertake a Dust Mitigation Study. The Dust Mitigation Study must include, at a minimum:
1. A comprehensive process flow diagram, describing the processes, air emission discharge points and control technologies used in the scrap metal processing process;
 2. A dust emissions inventory of the facility, identifying all significant dust emission sources. Dust sources should indicate (but not necessarily limited to) those involved in the metal processing process, as well as wind blown and wheel generated dust. The emissions inventory should include emissions from both point sources and fugitive sources;
 3. A comprehensive review of all practicable dust emission mitigation options, including an evaluation of the potential reduction in dust emissions for each mitigation option; and
 4. Identification of the most feasible mitigation measures to ensure compliance with the Act.
- U3.2 The Licensee must prepare a Dust Mitigation Report based on the finding of Dust Mitigation Study required by condition U3.1.
- The Dust Mitigation Report must include a proposed timetable for the selection and implementation of mitigation measures.
- The Dust Mitigation Report must be submitted to the EPA by no later than Friday 30 August 2019.

Attachment 2 – AECOM Evaluation of Mitigation Options

Table 10: Evaluation of Mitigation Options

Mitigation Option	NPI Control Factor (%)	Source Effectiveness Rating (1 - 3)	Practicality Rating (1 - 3)	Overall Site Effectiveness (Multiplier) (1 - 3)	Feasibility Score (3 - 30)
Reduce the amount of impurities in the scrap being delivered to Site	-	2	3	5	25
Increase frequency and number of existing dust deposition monitoring locations	-	2	3	4	20
Consideration of additional dust deposition monitoring locations	-	2	3	4	20
Road sweeping in combination with water cart (to limit airborne dust generated by the sweeper)	75	3	3	3	18
Reactive mitigation measures during conditions prone to high dust generation	-	2	2	4	16
Improved general house-keeping	-	2	3	3	15
Formalise dust management procedures and activities into the Air Quality Management Plan (AQMP)	-	2	3	3	15 ¹
Increased Site inspections & audits	-	2	3	3	15
Education and training for staff around best practices and minimising dust emissions	-	2	3	3	15
Enclosure of oxy-acetylene cutting activities (with exhaust filtering)	-	3	2	3	15
Specialised fencing to reduce the windspeed in critical areas of the Site	30	2	2	3	12
Enclosure of product bays	70 ²	2	2	3	12
Stabilisation of unsealed areas	40	2	3	2	10
Enclosure of conveyors	70	2	1	3	9
Enclosure of drop points (e.g. magnetic drums, conveyor transfer points)	70 ²	2	1	3	9

Attachment 3 – Proposed Dust Monitoring Locations – DG6 and DG7 circled red



Attachment 4 – Dust Obligations in InfraBuild OEMP

8.8 Air Quality – Dust Emissions

- 8.8.1. Operations Management shall operate and maintain the development in a manner that minimises dust emissions from the site.
- 8.8.2. All activities undertaken on the site shall be carried out in a manner that minimises the generation of dust, and emission of dust from the site, including wind-blown and traffic-generated dust.
- 8.8.3. Hardstand areas shall be regularly washed down to prevent a build up of fine materials;
- 8.8.4. All trafficked surfaces within the site shall be vacuum cleaned as required;
- 8.8.5. Shredder residue shall not be moved under wind conditions that would be conducive to the generation of dust;
- 8.8.6. All onsite equipment shall be maintained so that they operate efficiently to reduce emissions;
- 8.8.7. Should complaints regarding air quality be received then Retrofit control measures shall be implemented and dust suppression sprays shall be installed on the stockpiles.
- 8.8.8. *Plant Retrofit*
As may be directed by the EPA to address dust emissions from the development, Operations Management shall undertake the following works:
 - a) installation of appropriate litter controls on the shredder stack out conveyor and associated area to minimise the possibility of dust emissions;
 - b) installation of dust controls on plant conveyors and flock storage; and
 - c) implementation of dust and water quality controls at the site and any part of Sparke Street that is under the control of Operations Management.

Attachment 5 – Tree planting specifications

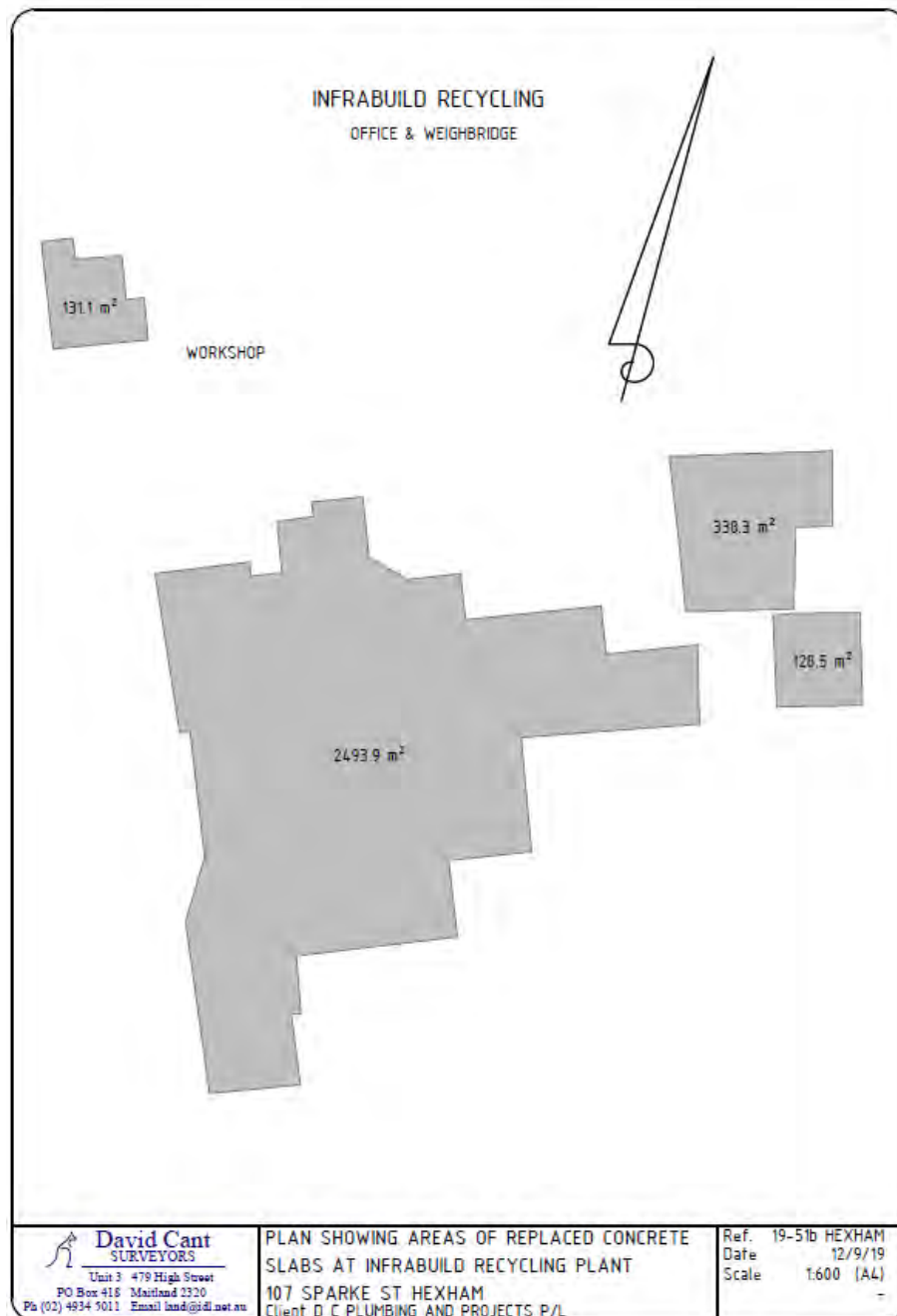
InfraBuild have planted approximately 266 semi-advanced Native evergreen trees; a mixture of the following four varieties to create a green-wall effect when mature.

- Tristaniopsis laurina
- Elaeocarpus reticulatus
- Syzygium 'Pinnacle'
- Elaeocarpus Eumundi

In addition to the trees, the below additions were added to improve the soil

- Install with each tree, 100L of new premium garden soil
- Install 30L of Organic soil improver per tree to promote transplanting success and growth
- Mulch the full length of the planting 1m either side of the tree line to a depth of 75mm- use natural look arborist mulch

Attachment 6 – Survey of new hardstand areas in non-ferrous yard



Attachment 7 – Copy of the most recent community consultation minutes.



COMMUNITY CONSULTATION COMMITTEE

Onesteel Recycling – Metal Shredding Facility Development at Sparke Street Hexham.

Minutes of Meeting Wednesday 10th June 2019

Committee Members Present:

Col Keith – Representing the Residents of Pacific Highway, Sandgate.
June Keith - Representing the Residents of Pacific Highway, Sandgate.
Jean Chapman - Representing the Residents of Old Maitland Rd Sandgate
Murray Cameron
Anne Montgomery
Don Hiscox
Glen Schrader – Hexham Shredder Manager.

The meeting commenced at 5 pm

Apologies: -

Agenda item 1.

Glen opened the meeting and thanked everyone for their attendance.

➤ **Agenda item 2.** (New attendees). Nil

Agenda Item 3.

Minutes from last meeting were tabled and read through from the April 2019 meeting.

Agenda item 4. (Business arising from previous minutes)

New initiative to not buy cars with fuel tanks in them has been raised as an improvement item for the site. Should reduce risk of fires and explosions.

Agenda item 5. (Progress of site activities)

Capex approved for approx. \$2M worth of concrete upgrades on site to assist with dust management. Heavy shred stocks are holding up works but hoping to start in non-ferrous area

Appendix H

Surface Water Quality Monitoring Results

CLIENT DETAILS

Contact **Jamie Vanderclay**
 Client **INFRABUILD**
 Address **ONESTEEL COMMERCIAL SHARED SERVICES
LOCKED BAG 5090
PARRAMATTA NSW 2124**
 Telephone **61 1800 724658**
 Facsimile **(Not specified)**
 Email **jamie.vanderclay@infrabuild.com**
 Project **Hexham**
 Order Number **Quote #6227257**
 Samples **4**

LABORATORY DETAILS

Manager **Huong Crawford**
 Laboratory **SGS Alexandria Environmental**
 Address **Unit 16, 33 Maddox St
Alexandria NSW 2015**
 Telephone **+61 2 8594 0400**
 Facsimile **+61 2 8594 0499**
 Email **au.environmental.sydney@sgs.com**
 SGS Reference **SE218075 R0**
 Date Received **26 Mar 2021**
 Date Reported **06 Apr 2021**

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES



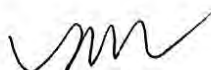
Bennet LO
 Senior Organic Chemist/Metals Chemis



Dong LIANG
 Metals/Inorganics Team Leader



Ly Kim HA
 Organic Section Head



Teresa NGUYEN
 Organic Chemist

Parameter	Units	LOR	Sample Number	SE218075.001	SE218075.002	SE218075.003	SE218075.004
			Sample Matrix	Water	Water	Water	Water
			Sample Date	24 Mar 2021	24 Mar 2021	24 Mar 2021	24 Mar 2021
			Sample Name	SW02B - Shredder	SW02B - Sed Trap	SW02B - NF Geotextile	SW06 - Creek

VOCs in Water Method: AN433 Tested: 31/3/2021

Monocyclic Aromatic Hydrocarbons

Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1	<1
o-xylene	µg/L	0.5	2.0	<0.5	<0.5	<0.5

Polycyclic VOCs

Naphthalene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
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Surrogates

d4-1,2-dichloroethane (Surrogate)	%	-	105	102	102	103
d8-toluene (Surrogate)	%	-	102	101	102	102
Bromofluorobenzene (Surrogate)	%	-	105	106	102	104

Totals

Total Xylenes	µg/L	1.5	2.0	<1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3	<3	<3

Volatile Petroleum Hydrocarbons in Water Method: AN433 Tested: 31/3/2021

TRH C6-C10	µg/L	50	<50	<50	<50	<50
TRH C6-C9	µg/L	40	<40	<40	<40	<40

Surrogates

d4-1,2-dichloroethane (Surrogate)	%	-	105	102	102	103
d8-toluene (Surrogate)	%	-	102	101	102	102
Bromofluorobenzene (Surrogate)	%	-	105	106	102	104

VPF F Bands

Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50

Parameter	Units	LOR	Sample Number	SE218075.001	SE218075.002	SE218075.003	SE218075.004
			Sample Matrix	Water	Water	Water	Water
			Sample Date	24 Mar 2021	24 Mar 2021	24 Mar 2021	24 Mar 2021
			Sample Name	SW02B - Shredder	SW02B - Sed Trap	SW02B - NF Geotextile	SW06 - Creek

TRH (Total Recoverable Hydrocarbons) in Water Method: AN403 Tested: 29/3/2021

TRH C10-C14	µg/L	50	150	<50	830	<50
TRH C15-C28	µg/L	200	2200	1900	2900	410
TRH C29-C36	µg/L	200	1600	1600	1500	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200
TRH C10-C40	µg/L	320	3900	3500	5200	410

TRH F Bands

TRH >C10-C16	µg/L	60	160	<60	970	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	160	<60	970	<60
TRH >C16-C34 (F3)	µg/L	500	3500	3100	3900	570
TRH >C34-C40 (F4)	µg/L	500	<500	510	<500	<500

Anions by Ion Chromatography in Water Method: AN245 Tested: 30/3/2021

Chloride	mg/L	1	32	37	6.4	76
Sulfate, SO ₄	mg/L	1	68	60	270	71
Nitrate Nitrogen, NO ₃ -N	mg/L	0.005	0.031	0.064	0.006	0.59

Nitrite in Water Method: AN277 Tested: 29/3/2021

Nitrite Nitrogen, NO ₂ as N	mg/L	0.005	<0.005	0.027	0.080	<0.005
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TKN Kjeldahl Digestion by Discrete Analyser Method: AN292 Tested: 29/3/2021

Total Kjeldahl Nitrogen	mg/L	0.05	4.2	2.5	1.7	1.7
Total Nitrogen (calc)	mg/L	0.05	4.3	2.6	1.8	2.3
Organic Nitrogen (calc)	mg/L	0.05	3.9	2.5	1.4	1.5

Total Phosphorus by Kjeldahl Digestion DA in Water Method: AN279/AN293(Sydney only) Tested: 29/3/2021

Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	0.44	0.64	0.36	0.19
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Parameter	Units	LOR	Sample Number	SE218075.001	SE218075.002	SE218075.003	SE218075.004
			Sample Matrix	Water	Water	Water	Water
			Sample Date	24 Mar 2021	24 Mar 2021	24 Mar 2021	24 Mar 2021
			Sample Name	SW02B - Shredder	SW02B - Sed Trap	SW02B - NF Geotextile	SW06 - Creek

Filterable Reactive Phosphorus (FRP) Method: AN278 Tested: 29/3/2021

Filterable Reactive Phosphorus as P	mg/L	0.005	0.006	0.061	0.046	0.14
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Ammonia Nitrogen by Discrete Analyser (Aquakem) Method: AN291 Tested: 29/3/2021

Ammonia Nitrogen, NH ₃ as N	mg/L	0.005	0.29	0.066	0.33	0.25
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Alkalinity Method: AN135 Tested: 29/3/2021

Bicarbonate Alkalinity as CaCO ₃	mg/L	5	98	220	<5	270
Carbonate Alkalinity as CaCO ₃	mg/L	1	<1	<1	<1	<1
Hydroxide Alkalinity as CaCO ₃	mg/L	5	<5	<5	<5	<5
Phenolphthalein Alkalinity as CaCO ₃ *	mg/L	5	<5	<5	<5	<5
Total Alkalinity as CaCO ₃	mg/L	5	98	220	<5	270

Acidity and Free CO₂ Method: AN140 Tested: 29/3/2021

Acidity to pH 8.3	mg CaCO ₃ /L	5	13	<5	170	11
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pH in water Method: AN101 Tested: 29/3/2021

pH**	No unit	-	6.5	7.7	3.0	7.4
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Conductivity and TDS by Calculation - Water Method: AN106 Tested: 29/3/2021

Conductivity @ 25 C	µS/cm	2	370	470	1200	680
Total Dissolved Solids (by calculation)	mg/L	2	220	280	740	410

Parameter	Units	LOR	SE218075.001	SE218075.002	SE218075.003	SE218075.004
Sample Number			SE218075.001	SE218075.002	SE218075.003	SE218075.004
Sample Matrix			Water	Water	Water	Water
Sample Date			24 Mar 2021	24 Mar 2021	24 Mar 2021	24 Mar 2021
Sample Name			SW02B - Shredder	SW02B - Sed Trap	SW02B - NF Geotextile	SW06 - Creek

Total and Volatile Suspended Solids (TSS / VSS) Method: AN114 Tested: 31/3/2021

Total Suspended Solids Dried at 103-105°C	mg/L	5	72	300	110	52
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Turbidity Method: AN119 Tested: 29/3/2021

Turbidity	NTU	0.5	100	650	220	55
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Oil and Grease in Water Method: AN185 Tested: 30/3/2021

Oil and Grease	mg/L	5	10	7	<5	<5
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Metals in Water (Dissolved) by ICPOES Method: AN320 Tested: 30/3/2021

Calcium, Ca	mg/L	0.1	50	58	30	37
Magnesium, Mg	mg/L	0.1	3.2	13	3.2	34
Potassium, K	mg/L	0.2	7.6	7.2	4.9	10
Sodium, Na	mg/L	0.1	39	48	20	91

Trace Metals (Dissolved) in Water by ICPMS Method: AN318 Tested: 1/4/2021

Arsenic, As	µg/L	1	<1	2	2	2
Cadmium, Cd	µg/L	0.1	0.1	0.1	0.6	<0.1
Chromium, Cr	µg/L	1	<1	3	7	2
Copper, Cu	µg/L	1	2	21	65	6
Lead, Pb	µg/L	1	4	<1	110	1
Nickel, Ni	µg/L	1	7	4	12	3
Zinc, Zn	µg/L	5	380	57	490	25

Mercury (dissolved) in Water Method: AN311(Perth)/AN312 Tested: 30/3/2021

Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
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Parameter	Units	LOR	Sample Number	SE218075.001	SE218075.002	SE218075.003	SE218075.004
			Sample Matrix	Water	Water	Water	Water
			Sample Date	24 Mar 2021	24 Mar 2021	24 Mar 2021	24 Mar 2021
			Sample Name	SW02B - Shredder	SW02B - Sed Trap	SW02B - NF Geotextile	SW06 - Creek

Trace Metals (Total) in Water by ICPMS Method: AN022/AN318 Tested: 1/4/2021

Total Arsenic	µg/L	1	5	11	5	2
Total Cadmium	µg/L	0.1	4.8	5.1	0.7	0.3
Total Chromium	µg/L	1	40	84	21	5
Total Copper	µg/L	1	140	240	87	14
Total Lead	µg/L	1	340	560	180	20
Total Nickel	µg/L	1	30	45	17	4
Total Zinc	µg/L	5	5300	3700	520	150

Mercury (total) in Water Method: AN311(Perth) /AN312 Tested: 30/3/2021

Total Mercury	mg/L	0.0001	0.0003	0.0005	0.0002	<0.0001
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MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Acidity and Free CO₂ Method: ME-(AU)-[ENV]AN140

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Acidity to pH 8.3	LB221648	mg CaCO ₃ /L	5	<5	9%	98%

Alkalinity Method: ME-(AU)-[ENV]AN135

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Bicarbonate Alkalinity as CaCO ₃	LB221664	mg/L	5	<5	4 - 8%	NA
Carbonate Alkalinity as CaCO ₃	LB221664	mg/L	1	<1	0%	NA
Hydroxide Alkalinity as CaCO ₃	LB221664	mg/L	5	<5		
Total Alkalinity as CaCO ₃	LB221664	mg/L	5	<5	4 - 8%	100 - 110%

Ammonia Nitrogen by Discrete Analyser (Aquakem) Method: ME-(AU)-[ENV]AN291

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Ammonia Nitrogen, NH ₃ as N	LB221653	mg/L	0.005	<0.005	0 - 1%	97%	97%

Anions by Ion Chromatography in Water Method: ME-(AU)-[ENV]AN245

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Chloride	LB221682	mg/L	1	<1.0	0%	92%	
Sulfate, SO ₄	LB221682	mg/L	1	<1.0	0%	92%	
Nitrate Nitrogen, NO ₃ -N	LB221682	mg/L	0.005	<0.005	7%	96%	94%

Conductivity and TDS by Calculation - Water Method: ME-(AU)-[ENV]AN106

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Conductivity @ 25 C	LB221615	µS/cm	2	<2	1%	96%
Total Dissolved Solids (by calculation)	LB221615	mg/L	2	<2	1%	97%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Filterable Reactive Phosphorus (FRP) Method: ME-(AU)-[ENV]AN278

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Filterable Reactive Phosphorus as P	LB221653	mg/L	0.005	<0.005	0%	100%

Mercury (dissolved) in Water Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Mercury	LB221683	mg/L	0.0001	<0.0001	0%	100%

Mercury (total) in Water Method: ME-(AU)-[ENV]AN311(Perth) /AN312

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery	MS %Recovery
Total Mercury	LB221684	mg/L	0.0001	<0.0001	NA	NA

Metals in Water (Dissolved) by ICPOES Method: ME-(AU)-[ENV]AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Calcium, Ca	LB221678	mg/L	0.1	<0.1	0%	98%	106%
Magnesium, Mg	LB221678	mg/L	0.1	<0.1	0%	85%	91%
Potassium, K	LB221678	mg/L	0.2	<0.2	0 - 1%	87%	91%
Sodium, Na	LB221678	mg/L	0.1	<0.1	1%	116%	125%

Nitrite in Water Method: ME-(AU)-[ENV]AN277

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Nitrite Nitrogen, NO2 as N	LB221653	mg/L	0.005	<0.005	0 - 2%	98%	94%

Oil and Grease in Water Method: ME-(AU)-[ENV]AN185

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Oil and Grease	LB221695	mg/L	5	<5	102%
	LB221929	mg/L	5	<5	82%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

pH in water Method: ME-(AU)-[ENV]AN101

Parameter	QC Reference	Units	LOR	LCS %Recovery
pH**	LB221615	No unit	-	100%

TKN Kjeldahl Digestion by Discrete Analyser Method: ME-(AU)-[ENV]AN292

Parameter	QC Reference	Units	LOR	DUP %RPD	MS %Recovery
Total Kjeldahl Nitrogen	LB221618	mg/L	0.05	1 - 4%	96%

Total and Volatile Suspended Solids (TSS / VSS) Method: ME-(AU)-[ENV]AN114

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Total Suspended Solids Dried at 103-105°C	LB221767	mg/L	5	<5	3 - 15%	91%

Total Phosphorus by Kjeldahl Digestion DA in Water Method: ME-(AU)-[ENV]AN279/AN293(Sydney only)

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Phosphorus (Kjeldahl Digestion) as P	LB221618	mg/L	0.02	<0.02	2%	98%	98%

Trace Metals (Dissolved) in Water by ICPMS Method: ME-(AU)-[ENV]AN318

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Arsenic, As	LB221855	µg/L	1	<1	0%	101%
Cadmium, Cd	LB221855	µg/L	0.1	<0.1	0%	108%
Chromium, Cr	LB221855	µg/L	1	<1	0%	114%
Copper, Cu	LB221855	µg/L	1	<1	0%	114%
Lead, Pb	LB221855	µg/L	1	<1	0%	110%
Nickel, Ni	LB221855	µg/L	1	<1	0%	110%
Zinc, Zn	LB221855	µg/L	5	<5	0%	107%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Trace Metals (Total) in Water by ICPMS Method: ME-(AU)-[ENV]AN022/AN318

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Total Arsenic	LB221858	µg/L	1	<1	102%
Total Cadmium	LB221858	µg/L	0,1	<0,1	110%
Total Chromium	LB221858	µg/L	1	<1	114%
Total Copper	LB221858	µg/L	1	<1	114%
Total Lead	LB221858	µg/L	1	<1	110%
Total Nickel	LB221858	µg/L	1	<1	110%
Total Zinc	LB221858	µg/L	5	<5	112%

TRH (Total Recoverable Hydrocarbons) in Water Method: ME-(AU)-[ENV]AN403

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C10-C14	LB221643	µg/L	50	<50	91%
TRH C15-C28	LB221643	µg/L	200	<200	108%
TRH C29-C36	LB221643	µg/L	200	<200	110%
TRH C37-C40	LB221643	µg/L	200	<200	NA
TRH C10-C40	LB221643	µg/L	320	<320	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH >C10-C16	LB221643	µg/L	60	<60	98%
TRH >C10-C16 - Naphthalene (F2)	LB221643	µg/L	60	<60	NA
TRH >C16-C34 (F3)	LB221643	µg/L	500	<500	111%
TRH >C34-C40 (F4)	LB221643	µg/L	500	<500	114%

Turbidity Method: ME-(AU)-[ENV]AN119

Parameter	QC Reference	Units	LOR	MB	DUP %RPD
Turbidity	LB221616	NTU	0.5	<0.5	17%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOCs in Water Method: ME-(AU)-[ENV]AN433

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB221812	µg/L	0.5	<0.5	0%	100%	105%
Toluene	LB221812	µg/L	0.5	<0.5	0%	101%	107%
Ethylbenzene	LB221812	µg/L	0.5	<0.5	0%	101%	106%
m/p-xylene	LB221812	µg/L	1	<1	0%	100%	105%
o-xylene	LB221812	µg/L	0.5	<0.5	0%	100%	106%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB221812	µg/L	0.5	<0.5	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB221812	%	-	101%	1 - 3%	100%	100%
d8-toluene (Surrogate)	LB221812	%	-	98%	1%	98%	101%
Bromofluorobenzene (Surrogate)	LB221812	%	-	95%	4 - 6%	104%	109%

Totals

Parameter	QC Reference	Units	LOR	MB
Total Xylenes	LB221812	µg/L	1.5	<1.5
Total BTEX	LB221812	µg/L	3	<3

Volatile Petroleum Hydrocarbons in Water Method: ME-(AU)-[ENV]AN433

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB221812	µg/L	50	<50	0%	74%	79%
TRH C6-C9	LB221812	µg/L	40	<40	0%	75%	81%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB221812	%	-	101%	1 - 3%	100%	100%
d8-toluene (Surrogate)	LB221812	%	-	98%	1%	98%	101%
Bromofluorobenzene (Surrogate)	LB221812	%	-	95%	4 - 6%	104%	109%

VPF F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB221812	µg/L	0.5		0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB221812	µg/L	50	<50	0%	67%	72%

METHOD

METHODOLOGY SUMMARY

AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN022	The water sample is digested with Nitric Acid and made up to the original volume similar to APHA3030E.
AN022/AN318	Following acid digestion of un filtered sample, determination of elements at trace level in waters by ICP-MS technique, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
AN106	Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present, measured by the conductivity, are present as NaCl.
AN114	Total Suspended and Volatile Suspended Solids: The sample is homogenised by shaking and a known volume is filtered through a pre-weighed GF/C filter paper and washed well with deionised water. The filter paper is dried and reweighed. The TSS is the residue retained by the filter per unit volume of sample. Reference APHA 2540 D. Internal Reference AN114
AN119	Turbidity by Nephelometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
AN135	Alkalinity (and forms of) by Titration: The sample is titrated with standard acid to pH 8.3 (P titre) and pH 4.5 (T titre) and permanent and/or total alkalinity calculated. The results are expressed as equivalents of calcium carbonate or recalculated as bicarbonate, carbonate and hydroxide. Reference APHA 2320. Internal Reference AN135
AN140	Acidity by Titration: The water sample is titrated with sodium hydroxide to designated pH end point. In a sample containing only carbon dioxide, bicarbonates and carbonates, titration to pH 8.3 at 25°C corresponds to stoichiometric neutralisation of carbonic acid to bicarbonate. Method reference APHA 2310 B.
AN185	Gravimetric Oil & Grease and Hydrocarbons: A known volume of sample is extracted using an organic solvent and the solvent layer with dissolved oils and greases is transferred to a pre-weighed beaker. The solvent is evaporated over low heating and the beaker reweighed. The concentration of oil and grease is determined by the increase in mass of the collection beaker per volume of sample extracted. O&G is suitable for lubricating oils and other high boiling point products but is not suitable for volatiles. Reference to APHA 5520 B and USEPA 1664 Revision B.. Internal Reference AN185

METHOD

METHODOLOGY SUMMARY

AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO ₂ , NO ₃ and SO ₄ are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN277/WC250.312	Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
AN278	Filterable Reactive Phosphorus by DA (determined on filtered sample): Orthophosphate reacts with ammonium molybdate (Mo VI) and potassium antimonyl tartrate (Sb III) in acid medium to form an antimony-phosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue colour and the absorbance is read at 880 nm. The sensitivity of the automated method is 10-20 times that of the macro method. Reference APHA 4500-P F
AN279/AN293(Sydney)	The sample is digested with Sulphuric acid, K ₂ SO ₄ and CuSO ₄ . All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.
AN281	An unfiltered water or soil sample is first digested in a block digester with sulfuric acid, K ₂ SO ₄ and CuSO ₄ . The ammonia produced following digestion is then measured colourimetrically using the Aquakem 250 Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.
AN291	Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 670 nm by Discrete Analyser.
AN311(Perth) /AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions taken from unfiltered sample are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.

METHOD

METHODOLOGY SUMMARY

AN403

Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.

AN403

Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Silica) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.

AN403

The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.

AN433

VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

Calculation

Free and Total Carbon Dioxide may be calculated using alkalinity forms only when the samples TDS is <500mg/L. If TDS is >500mg/L free or total carbon dioxide cannot be reported. APHA4500CO2 D.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
***	Indicates that both * and ** apply.	-	The sample was not analysed for this analyte
		NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be $1.6 / 2$ (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the \pm sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

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ANALYTICAL RESULTS

SE223651 R0

VOCs in Water [AN433] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Benzene	µg/L	0.5	2.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	38	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	3.6	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	11	<1	<1	<1
o-xylene	µg/L	0.5	7.6	<0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	19	<1.5	<1.5	<1.5
Total BTEX	µg/L	3	63	<3	<3	<3
Naphthalene	µg/L	0.5	8.5	<0.5	<0.5	<0.5



ANALYTICAL RESULTS

SE223651 R0

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
TRH C6-C9	µg/L	40	170	<40	<40	<40
Benzene (F0)	µg/L	0.5	2.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	110	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	52	<50	<50	<50



ANALYTICAL RESULTS

SE223651 R0

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 22/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
TRH C10-C14	µg/L	50	1100	150	2800	290
TRH C15-C28	µg/L	200	13000	1400	14000	960
TRH C29-C36	µg/L	200	12000	1500	4000	1000
TRH C37-C40	µg/L	200	3900	590	970	780
TRH >C10-C16	µg/L	60	1600	170	3400	360
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	1600	170	3400	360
TRH >C16-C34 (F3)	µg/L	500	21000	2400	16000	1400
TRH >C34-C40 (F4)	µg/L	500	7600	1100	2100	1200
TRH C10-C40	µg/L	320	31000	3600	22000	3000



ANALYTICAL RESULTS

SE223651 R0

Anions by Ion Chromatography in Water [AN245] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Chloride	mg/L	1	230	47	23	350
Sulfate, SO4	mg/L	1	99	70	28	200
Nitrate Nitrogen, NO3-N	mg/L	0.005	<0.005	2.4	<0.005	<0.005



ANALYTICAL RESULTS

SE223651 R0

Nitrite in Water [AN277] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005	<0.005	<0.005	<0.005



ANALYTICAL RESULTS

SE223651 R0

TKN Kjeldahl Digestion by Discrete Analyser [AN292] Tested: 20/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Total Kjeldahl Nitrogen	mg/L	0.05	16	1.2	7.5	5.3
Total Nitrogen (calc)	mg/L	0.05	16	3.6	7.5	5.3
Organic Nitrogen (calc)	mg/L	0.05	11	1.2	5.8	3.9



ANALYTICAL RESULTS

SE223651 R0

Ammonia Nitrogen by Discrete Analyser (Aquakem) [AN291] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Ammonia Nitrogen, NH ₃ as N	mg/L	0.005	5.2	0.016	1.8	1.4



ANALYTICAL RESULTS

SE223651 R0

Filterable Reactive Phosphorus (FRP) [AN278] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Filterable Reactive Phosphorus as P	mg/L	0.005	0.087	0.045	0.010	<0.005



ANALYTICAL RESULTS

SE223651 R0

Total Phosphorus by Kjeldahl Digestion DA in Water [AN279/AN293(Sydney only)] Tested: 20/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	1.6	0.07	0.34	0.11



ANALYTICAL RESULTS

SE223651 R0

pH in water [AN101] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
pH**	No unit	-	7.4	7.3	7.2	7.8



ANALYTICAL RESULTS

SE223651 R0

Conductivity and TDS by Calculation - Water [AN106] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER - 27/8/2021 SE223651.001	WATER - 27/8/2021 SE223651.002	WATER - 27/8/2021 SE223651.003	WATER - 27/8/2021 SE223651.004
PARAMETER	UOM	LOR				
Conductivity @ 25 C	µS/cm	2	1500	1100	380	2900
Total Dissolved Solids (by calculation)	mg/L	2	910	640	230	1800



ANALYTICAL RESULTS

SE223651 R0

Total and Volatile Suspended Solids (TSS / VSS) [AN114] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Total Suspended Solids Dried at 103-105°C	mg/L	5	390	85	66	16



ANALYTICAL RESULTS

SE223651 R0

Alkalinity [AN135] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
			SE223651.001	SE223651.002	SE223651.003	SE223651.004
PARAMETER	UOM	LOR				
Bicarbonate Alkalinity as CaCO3	mg/L	5	110	370	49	210
Carbonate Alkalinity as CaCO3	mg/L	1	<1	<1	<1	<1
Hydroxide Alkalinity as CaCO3	mg/L	5	<5	<5	<5	<5
Phenolphthalein Alkalinity as CaCO3*	mg/L	5	<5	<5	<5	<5
Total Alkalinity as CaCO3	mg/L	5	110	370	49	210



ANALYTICAL RESULTS

SE223651 R0

Acidity and Free CO2 [AN140] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Acidity to pH 8.3	mg CaCO3/L	5	57	<5	26	18



ANALYTICAL RESULTS

SE223651 R0

Turbidity [AN119] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Turbidity	NTU	0.5	90	29	54	11



ANALYTICAL RESULTS

SE223651 R0

Oil and Grease in Water [AN185] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Oil and Grease	mg/L	5	68	<5	27	<5



ANALYTICAL RESULTS

SE223651 R0

Metals in Water (Dissolved) by ICPOES [AN320] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Calcium, Ca	mg/L	0.1	83	64	37	92
Magnesium, Mg	mg/L	0.1	23	64	4.2	41
Sodium, Na	mg/L	0.1	180	71	32	250
Potassium, K	mg/L	0.2	18	12	5.7	20



ANALYTICAL RESULTS

SE223651 R0

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Arsenic, As	µg/L	1	2	2	<1	3
Cadmium, Cd	µg/L	0.1	<0.1	0.2	0.1	<0.1
Chromium, Cr	µg/L	1	2	<1	1	<1
Copper, Cu	µg/L	1	2	14	21	2
Lead, Pb	µg/L	1	2	<1	25	<1
Nickel, Ni	µg/L	1	4	2	11	11
Zinc, Zn	µg/L	5	26	140	80	650



ANALYTICAL RESULTS

SE223651 R0

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER - 27/8/2021 SE223651.001	WATER - 27/8/2021 SE223651.002	WATER - 27/8/2021 SE223651.003	WATER - 27/8/2021 SE223651.004
PARAMETER	UOM	LOR				
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001



ANALYTICAL RESULTS

SE223651 R0

Trace Metals (Total) in Water by ICPMS [AN022/AN318] Tested: 16/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Total Arsenic	µg/L	1	25	3	2	4
Total Cadmium	µg/L	0.1	1.9	0.2	0.4	0.2
Total Chromium	µg/L	1	17	1	5	<1
Total Copper	µg/L	1	110	17	54	3
Total Nickel	µg/L	1	14	3	14	11
Total Lead	µg/L	1	160	6	74	2
Total Zinc	µg/L	5	1500	170	280	670



ANALYTICAL RESULTS

SE223651 R0

Mercury (total) in Water [AN311(Perth) /AN312] Tested: 17/9/2021

			SW02B-Shredder	SW03B-Sed Trap	SW05B-NF Geotextil	SW06-Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			27/8/2021	27/8/2021	27/8/2021	27/8/2021
PARAMETER	UOM	LOR	SE223651.001	SE223651.002	SE223651.003	SE223651.004
Total Mercury	mg/L	0.0001	0.0037	0.0004	0.0002	<0.0001

METHOD

METHODOLOGY SUMMARY

AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN022/AN318	Following acid digestion of un filtered sample, determination of elements at trace level in waters by ICP-MS technique, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN022	The water sample is digested with Nitric Acid and made up to the original volume similar to APHA3030E.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
AN106	Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present, measured by the conductivity, are present as NaCl.
AN114	Total Suspended and Volatile Suspended Solids: The sample is homogenised by shaking and a known volume is filtered through a pre-weighed GF/C filter paper and washed well with deionised water. The filter paper is dried and reweighed. The TSS is the residue retained by the filter per unit volume of sample. Reference APHA 2540 D. Internal Reference AN114
AN119	Turbidity by Nephelometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
AN135	Alkalinity (and forms of) by Titration: The sample is titrated with standard acid to pH 8.3 (P titre) and pH 4.5 (T titre) and permanent and/or total alkalinity calculated. The results are expressed as equivalents of calcium carbonate or recalculated as bicarbonate, carbonate and hydroxide. Reference APHA 2320. Internal Reference AN135
AN140	Acidity by Titration: The water sample is titrated with sodium hydroxide to designated pH end point. In a sample containing only carbon dioxide, bicarbonates and carbonates, titration to pH 8.3 at 25°C corresponds to stoichiometric neutralisation of carbonic acid to bicarbonate. Method reference APHA 2310 B.
AN185	Gravimetric Oil & Grease and Hydrocarbons: A known volume of sample is extracted using an organic solvent and the solvent layer with dissolved oils and greases is transferred to a pre-weighed beaker. The solvent is evaporated over low heating and the beaker reweighed. The concentration of oil and grease is determined by the increase in mass of the collection beaker per volume of sample extracted. O&G is suitable for lubricating oils and other high boiling point products but is not suitable for volatiles. Reference to APHA 5520 B and USEPA 1664 Revision B.. Internal Reference AN185
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO ₂ , NO ₃ and SO ₄ are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN277/WC250.312	Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
AN278	Filterable Reactive Phosphorus by DA (determined on filtered sample): Orthophosphate reacts with ammonium molybdate (Mo VI) and potassium antimonyl tartrate (Sb III) in acid medium to form an antimony-phosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue colour and the absorbance is read at 880 nm. The sensitivity of the automated method is 10-20 times that of the macro method. Reference APHA 4500-P F
AN279/AN293(Sydney)	The sample is digested with Sulphuric acid, K ₂ SO ₄ and CuSO ₄ . All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.
AN281	An unfiltered water or soil sample is first digested in a block digester with sulfuric acid, K ₂ SO ₄ and CuSO ₄ . The ammonia produced following digestion is then measured colourimetrically using the Aquakem 250 Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.
AN291	Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 670 nm by Discrete Analyser.

AN311(Perth) /AN312

Mercury by Cold Vapour AAS in Waters: Mercury ions taken from unfiltered sample are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.

AN311(Perth)/AN312

Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.

AN318

Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).

AN320

Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .

AN320

Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.

AN403

Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.

AN403

Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Silica) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.

AN403

The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.

AN433

VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

Calculation

Free and Total Carbon Dioxide may be calculated using alkalinity forms only when the samples TDS is <500mg/L. If TDS is >500mg/L free or total carbon dioxide cannot be reported . APHA4500CO2 D.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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SGS Reference SE224611 R0
Date Received 14/10/2021
Date Reported 21/10/2021

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

Ammonia Nitrogen - The Limit of Reporting (LOR) has been raised due to matrix interference.

VPH- The Limit of Reporting (LOR) has been raised due to interferences from the sample matrix.

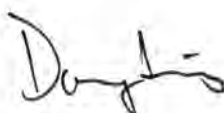
VPH - There were no BTEX vials provided, samples was subsample for BTEX analysis.

Ion Chromatography - The Limit of Reporting (LOR) has been raised for Nitrate-Nitrogen due to high conductivity of the sample requiring dilution.

SIGNATORIES



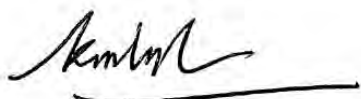
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Ly Kim HA
Organic Section Head



Shane MCDERMOTT
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ANALYTICAL RESULTS

SE224611 R0

VOCs in Water [AN433] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Benzene	µg/L	0.5	0.7	<0.5	<0.5	<5.0 †
Toluene	µg/L	0.5	1.0	<0.5	<0.5	<5.0 †
Ethylbenzene	µg/L	0.5	0.7	<0.5	<0.5	<5.0 †
m/p-xylene	µg/L	1	2	<1	<1	<10 †
o-xylene	µg/L	0.5	1.4	<0.5	<0.5	<5.0 †
Total Xylenes	µg/L	1.5	3.2	<1.5	<1.5	<1.5
Total BTEX	µg/L	3	6	<3	<3	<3
Naphthalene	µg/L	0.5	0.5	<0.5	<0.5	<5.0 †



ANALYTICAL RESULTS

SE224611 R0

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
TRH C6-C9	µg/L	40	<40	<40	<40	<400 †
Benzene (F0)	µg/L	0.5	0.7	<0.5	<0.5	<5.0 †
TRH C6-C10	µg/L	50	<50	<50	<50	<500 †
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<500 †



ANALYTICAL RESULTS

SE224611 R0

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 15/10/2021

PARAMETER	UOM	LOR	SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			12/10/2021 SE224611.001	12/10/2021 SE224611.002	12/10/2021 SE224611.003	12/10/2021 SE224611.004
TRH C10-C14	µg/L	50	240	<50	<50	<50
TRH C15-C28	µg/L	200	2600	<200	1400	<200
TRH C29-C36	µg/L	200	3300	<200	550	<200
TRH C37-C40	µg/L	200	450	<200	<200	<200
TRH >C10-C16	µg/L	60	360	<60	<60	68
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	360	<60	<60	68
TRH >C16-C34 (F3)	µg/L	500	4700	<500	1800	<500
TRH >C34-C40 (F4)	µg/L	500	1400	<500	<500	<500
TRH C10-C40	µg/L	320	6500	<320	2000	<320



ANALYTICAL RESULTS

SE224611 R0

Anions by Ion Chromatography in Water [AN245] Tested: 19/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Nitrate Nitrogen, NO3-N	mg/L	0.005	<0.025†	1.5	<0.005	0.14
Chloride	mg/L	1	760	51	18	17000
Sulfate, SO4	mg/L	1	430	43	39	2300



ANALYTICAL RESULTS

SE224611 R0

Nitrite in Water [AN277] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Nitrite Nitrogen, NO2 as N	mg/L	0.005	<0.005	0.014	<0.005	<0.005



ANALYTICAL RESULTS

SE224611 R0

TKN Kjeldahl Digestion by Discrete Analyser [AN292] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Total Kjeldahl Nitrogen	mg/L	0.05	9.2	0.91	3.7	0.92
Total Nitrogen (calc)	mg/L	0.05	9.2	2.4	3.7	1.1
Organic Nitrogen (calc)	mg/L	0.05	7.4	0.81	2.3	0.90



ANALYTICAL RESULTS

SE224611 R0

Ammonia Nitrogen by Discrete Analyser (Aquakem) [AN291] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Ammonia Nitrogen, NH ₃ as N	mg/L	0.005	1.8	0.10	1.3	<0.10 †



ANALYTICAL RESULTS

SE224611 R0

Filterable Reactive Phosphorus (FRP) [AN278] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Filterable Reactive Phosphorus as P	mg/L	0.005	0.061	0.099	0.016	0.020



ANALYTICAL RESULTS

SE224611 R0

Total Phosphorus by Kjeldahl Digestion DA in Water [AN279/AN293(Sydney only)] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Total Phosphorus (Kjeldahl Digestion) as P	mg/L	0.02	1.0	0.19	0.21	<0.02



ANALYTICAL RESULTS

SE224611 R0

pH in water [AN101] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
pH**	No unit	-	7.3	7.2	6.9	7.5



ANALYTICAL RESULTS

SE224611 R0

Conductivity and TDS by Calculation - Water [AN106] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Conductivity @ 25 C	µS/cm	2	3600	910	380	59000
Total Dissolved Solids (by calculation)	mg/L	2	2200	540	230	35000



ANALYTICAL RESULTS

SE224611 R0

Total and Volatile Suspended Solids (TSS / VSS) [AN114] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Total Suspended Solids Dried at 103-105°C	mg/L	5	410	31	21	10



ANALYTICAL RESULTS

SE224611 R0

Alkalinity [AN135] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Bicarbonate Alkalinity as CaCO3	mg/L	5	270	360	110	130
Carbonate Alkalinity as CaCO3	mg/L	1	<1	<1	<1	<1
Hydroxide Alkalinity as CaCO3	mg/L	5	<5	<5	<5	<5
Phenolphthalein Alkalinity as CaCO3*	mg/L	5	<5	<5	<5	<5
Total Alkalinity as CaCO3	mg/L	5	270	360	110	130



ANALYTICAL RESULTS

SE224611 R0

Acidity and Free CO2 [AN140] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Acidity to pH 8.3	mg CaCO3/L	5	32	27	9	23



ANALYTICAL RESULTS

SE224611 R0

Turbidity [AN119] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
PARAMETER	UOM	LOR	SE224611.001	SE224611.002	SE224611.003	SE224611.004
Turbidity	NTU	0.5	240	11	29	8.9



ANALYTICAL RESULTS

SE224611 R0

Oil and Grease in Water [AN185] Tested: 19/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Oil and Grease	mg/L	5	8	<5	<5	<5



ANALYTICAL RESULTS

SE224611 R0

Metals in Water (Dissolved) by ICPOES [AN320] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Calcium, Ca	mg/L	0.1	150	60	350	41
Magnesium, Mg	mg/L	0.1	78	47	1100	4.6
Sodium, Na	mg/L	0.1	500	66	11000	24
Potassium, K	mg/L	0.2	24	11	440	6.2



ANALYTICAL RESULTS

SE224611 R0

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Arsenic, As	µg/L	1	2	4	1	2
Cadmium, Cd	µg/L	0.1	<0.1	0.2	<0.1	0.1
Chromium, Cr	µg/L	1	<1	<1	<1	<1
Copper, Cu	µg/L	1	<1	11	11	5
Lead, Pb	µg/L	1	<1	<1	3	<1
Nickel, Ni	µg/L	1	8	2	7	1
Zinc, Zn	µg/L	5	67	130	100	21



ANALYTICAL RESULTS

SE224611 R0

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
PARAMETER	UOM	LOR	SE224611.001	SE224611.002	SE224611.003	SE224611.004
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001



ANALYTICAL RESULTS

SE224611 R0

Trace Metals (Total) in Water by ICPMS [AN022/AN318] Tested: 14/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Total Arsenic	µg/L	1	29	4	2	2
Total Cadmium	µg/L	0.1	3.2	0.2	0.2	<0.1
Total Chromium	µg/L	1	39	3	3	1
Total Copper	µg/L	1	140	18	26	7
Total Nickel	µg/L	1	27	4	8	2
Total Lead	µg/L	1	320	25	27	6
Total Zinc	µg/L	5	3400	200	180	41



ANALYTICAL RESULTS

SE224611 R0

Mercury (total) in Water [AN311(Perth) /AN312] Tested: 15/10/2021

			SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			-	-	-	-
			12/10/2021	12/10/2021	12/10/2021	12/10/2021
			SE224611.001	SE224611.002	SE224611.003	SE224611.004
PARAMETER	UOM	LOR				
Total Mercury	mg/L	0.0001	0.0016	<0.0001	<0.0001	0.0001

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples [MA-1523] Tested: 21/10/2021

PARAMETER	UOM	LOR	SW02B - Shedder	SW03B- Sed Trap	SW05B - NF Geotextile	SW06 - Creek
			WATER	WATER	WATER	WATER
			12/10/2021 SE224611.001	12/10/2021 SE224611.002	12/10/2021 SE224611.003	12/10/2021 SE224611.004
Perfluorobutanoic acid (PFBA)	µg/L	0.002	0.038	0.026	0.021	0.055
Perfluoropentanoic acid (PFPeA)	µg/L	0.002	0.004	<0.002	0.014	0.017
Perfluorohexanoic acid (PFHxA)	µg/L	0.002	0.019	0.017	0.016	0.013
Perfluoroheptanoic acid (PFHpA)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctanoic Acid (PFOA)	µg/L	0.002	0.031	0.025	0.022	0.004
Perfluorononanoic acid (PFNA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorodecanoic acid (PFDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluoroundecanoic acid (PFUnA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorododecanoic acid (PFDoA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorohexadecanoic acid (PFHxDA)	µg/L	0.008	<0.008	<0.008	<0.008	<0.008
Perfluorobutane sulfonate (PFBS)	µg/L	0.004	0.044	0.030	0.030	0.010
Perfluoropentane sulfonate (PFPeS)	µg/L	0.004	<0.004	<0.004	<0.004	<0.004
Perfluorohexane sulfonate (PFHxS)	µg/L	0.002	0.008	0.013	0.012	0.003
Perfluoroheptane sulfonate (PFHpS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonate (PFOS)	µg/L	0.002	0.046	0.058	0.10	0.015
Sum of PFHxS and PFOS	µg/L	0.002	0.054	0.071	0.11	0.018
Perfluorononane sulfonate (PFNS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorodecane sulfonate (PFDS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
Perfluorododecane sulfonate (PFDoS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	µg/L	0.002	0.033	0.018	0.028	0.041
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002	0.003
Perfluorooctane sulfonamide (PFOSA)	µg/L	0.008	<0.008	<0.008	<0.008	<0.008
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
2-(N-Methylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Methylperfluorooctanesulfonamidoacetic acid	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
N-Ethylperfluorooctanesulfonamidoacetic Acid	µg/L	0.01	<0.01	<0.01	<0.01	<0.01
Total of PFAS (n=30)	µg/L	0.04	0.22	0.19	0.24	0.16

METHOD

METHODOLOGY SUMMARY

AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN022/AN318	Following acid digestion of un filtered sample, determination of elements at trace level in waters by ICP-MS technique, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN022	The water sample is digested with Nitric Acid and made up to the original volume similar to APHA3030E.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
AN106	Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present, measured by the conductivity, are present as NaCl.
AN114	Total Suspended and Volatile Suspended Solids: The sample is homogenised by shaking and a known volume is filtered through a pre-weighed GF/C filter paper and washed well with deionised water. The filter paper is dried and reweighed. The TSS is the residue retained by the filter per unit volume of sample. Reference APHA 2540 D. Internal Reference AN114
AN119	Turbidity by Nephelometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
AN135	Alkalinity (and forms of) by Titration: The sample is titrated with standard acid to pH 8.3 (P titre) and pH 4.5 (T titre) and permanent and/or total alkalinity calculated. The results are expressed as equivalents of calcium carbonate or recalculated as bicarbonate, carbonate and hydroxide. Reference APHA 2320. Internal Reference AN135
AN140	Acidity by Titration: The water sample is titrated with sodium hydroxide to designated pH end point. In a sample containing only carbon dioxide, bicarbonates and carbonates, titration to pH 8.3 at 25°C corresponds to stoichiometric neutralisation of carbonic acid to bicarbonate. Method reference APHA 2310 B.
AN185	Gravimetric Oil & Grease and Hydrocarbons: A known volume of sample is extracted using an organic solvent and the solvent layer with dissolved oils and greases is transferred to a pre-weighed beaker. The solvent is evaporated over low heating and the beaker reweighed. The concentration of oil and grease is determined by the increase in mass of the collection beaker per volume of sample extracted. O&G is suitable for lubricating oils and other high boiling point products but is not suitable for volatiles. Reference to APHA 5520 B and USEPA 1664 Revision B.. Internal Reference AN185
AN245	Anions by Ion Chromatography: A water sample is injected into an eluent stream that passes through the ion chromatographic system where the anions of interest ie Br, Cl, NO ₂ , NO ₃ and SO ₄ are separated on their relative affinities for the active sites on the column packing material. Changes to the conductivity and the UV-visible absorbance of the eluent enable identification and quantitation of the anions based on their retention time and peak height or area. APHA 4110 B
AN277/WC250.312	Nitrite ions, when reacted with a reagent containing sulphanilamide and N-(1-naphthyl)-ethylenediamine dihydrochloride produce a highly coloured azo dye that is measured photometrically at 540nm.
AN278	Filterable Reactive Phosphorus by DA (determined on filtered sample): Orthophosphate reacts with ammonium molybdate (Mo VI) and potassium antimonyl tartrate (Sb III) in acid medium to form an antimony-phosphomolybdate complex. This complex is subsequently reduced with ascorbic acid to form a blue colour and the absorbance is read at 880 nm. The sensitivity of the automated method is 10-20 times that of the macro method. Reference APHA 4500-P F
AN279/AN293(Sydney)	The sample is digested with Sulphuric acid, K ₂ SO ₄ and CuSO ₄ . All forms of phosphorus are converted into orthophosphate. The digest is cooled and placed on the discrete analyser for colorimetric analysis.
AN281	An unfiltered water or soil sample is first digested in a block digester with sulfuric acid, K ₂ SO ₄ and CuSO ₄ . The ammonia produced following digestion is then measured colourimetrically using the Aquakem 250 Discrete Analyser. A portion of the digested sample is buffered to an alkaline pH, and interfering cations are complexed. The ammonia then reacts with salicylate and hypochlorite to give a blue colour whose absorbance is measured at 660nm and compared with calibration standards. This is proportional to the concentration of Total Kjeldahl Nitrogen in the original sample.
AN291	Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 670 nm by Discrete Analyser.

AN311(Perth) /AN312

Mercury by Cold Vapour AAS in Waters: Mercury ions taken from unfiltered sample are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.

AN311(Perth)/AN312

Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.

AN318

Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).

AN320

Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .

AN320

Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.

AN403

Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.

AN403

Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Silica) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.

AN403

The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.

AN433

VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

Calculation

Free and Total Carbon Dioxide may be calculated using alkalinity forms only when the samples TDS is <500mg/L. If TDS is >500mg/L free or total carbon dioxide cannot be reported . APHA4500CO2 D.

MA-1523

This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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