

## **Bourke Small Stock Abattoir**

**Reporting Period: 14 November 2019 to 31 December 2020**

### **Environmental Monitoring Summary**

#### **Overview**

This document provides a summary of environmental monitoring performance for the current reporting period under the relevant Development Consent (SSD7268), EPL20918, Environmental Impact Statement (EIS) and Operational Environmental Management Plan (OEMP) v8.1. Key aspects reported and assessed include climate, noise, water and wastewater, biodiversity, heritage, visual amenity and greenhouse gases.

Not all monitoring data that is specified under the Consent is available due to the abattoir being under a temporary shut since May 2019. Further, as operations have ceased there is no generation of waste water and therefore under the various applicable management plans, irrigation of waste water is not occurring, hence data in relation to this aspect (e.g., soil, crop and effluent recordings) is not yet being collected. Data monitoring programs will come into effect when there is sufficient treatable effluent generated on site, and this will occur after the installation of the pivot irrigation system ahead of any planned recommencement of operations. Future data will be collected and included in this summary document over the next reporting period, contingent on sufficient effluents to be treated on site. Refer to Section 1.0 of Effluent System Commissioning Plan (p.229 of OEMP v8.1 for minimum period expected to generate sufficient effluents).

As the abattoir was under temporary shut during the entire reporting period, there were minimal operational activities and also minimal traffic generated on site. Most of the construction requirements (e.g., site access and intersection capacity, car park, CTMP, CEMP, etc.) were completed prior to initial operation of the abattoir (i.e., prior to January 2019) and were addressed in the previous two Annual Reviews. Remaining incomplete construction activities did not commence in the current reporting period and will be completed prior to recommencement of operation.

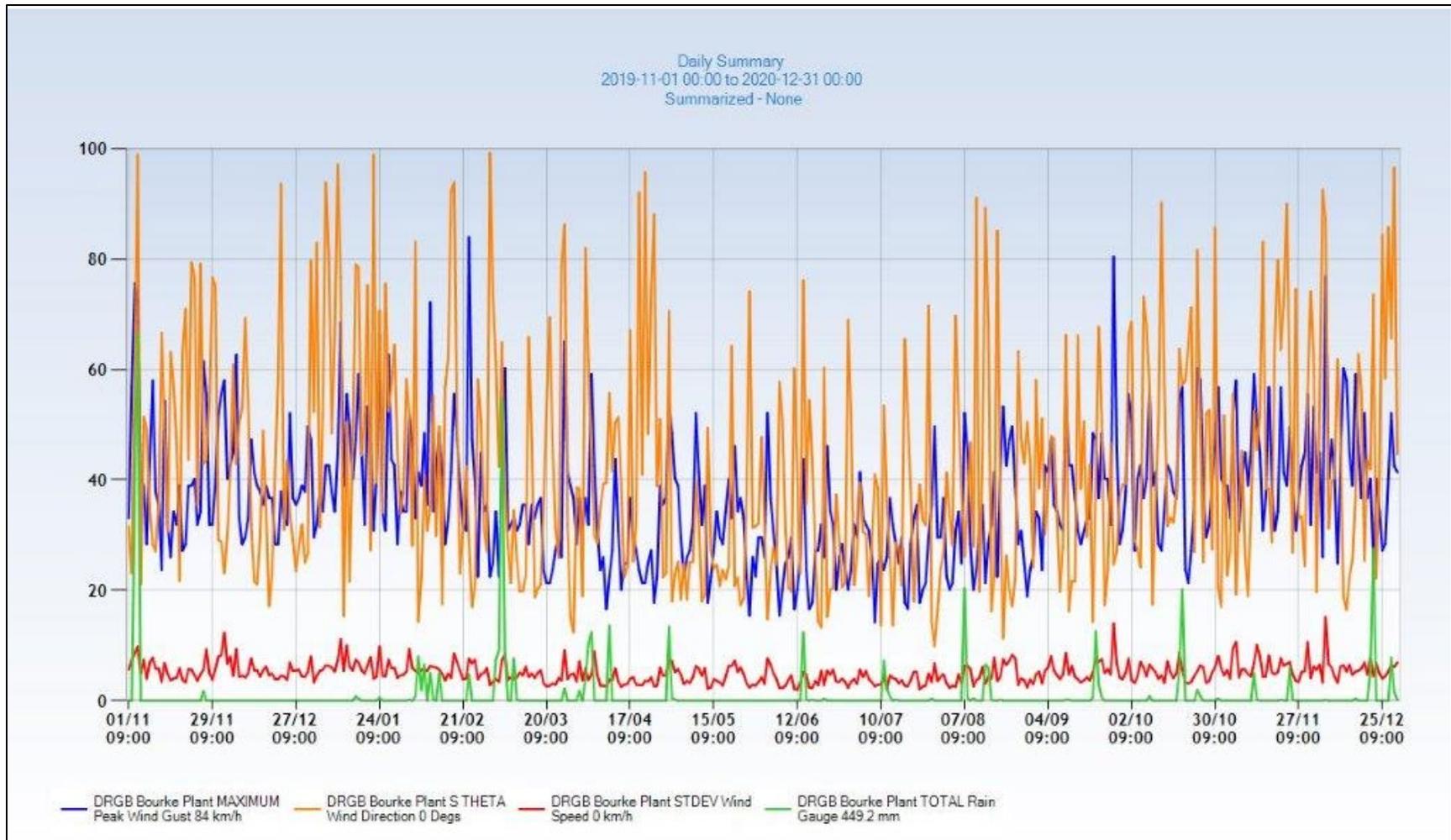
In addition to the above, assessment on social economic impact as detailed in the EIS has not commenced due to outstanding construction activities and no operational labour employed as a result of the temporary shut. Therefore, the actual economic impacts cannot be fully measured based on limited months of operational activities. A complete social economic impact (including employment and budget impacts) will be assessed after finishing remaining construction activities and reactivating employee hiring process for recommencement of operations.

## Climate Monitoring

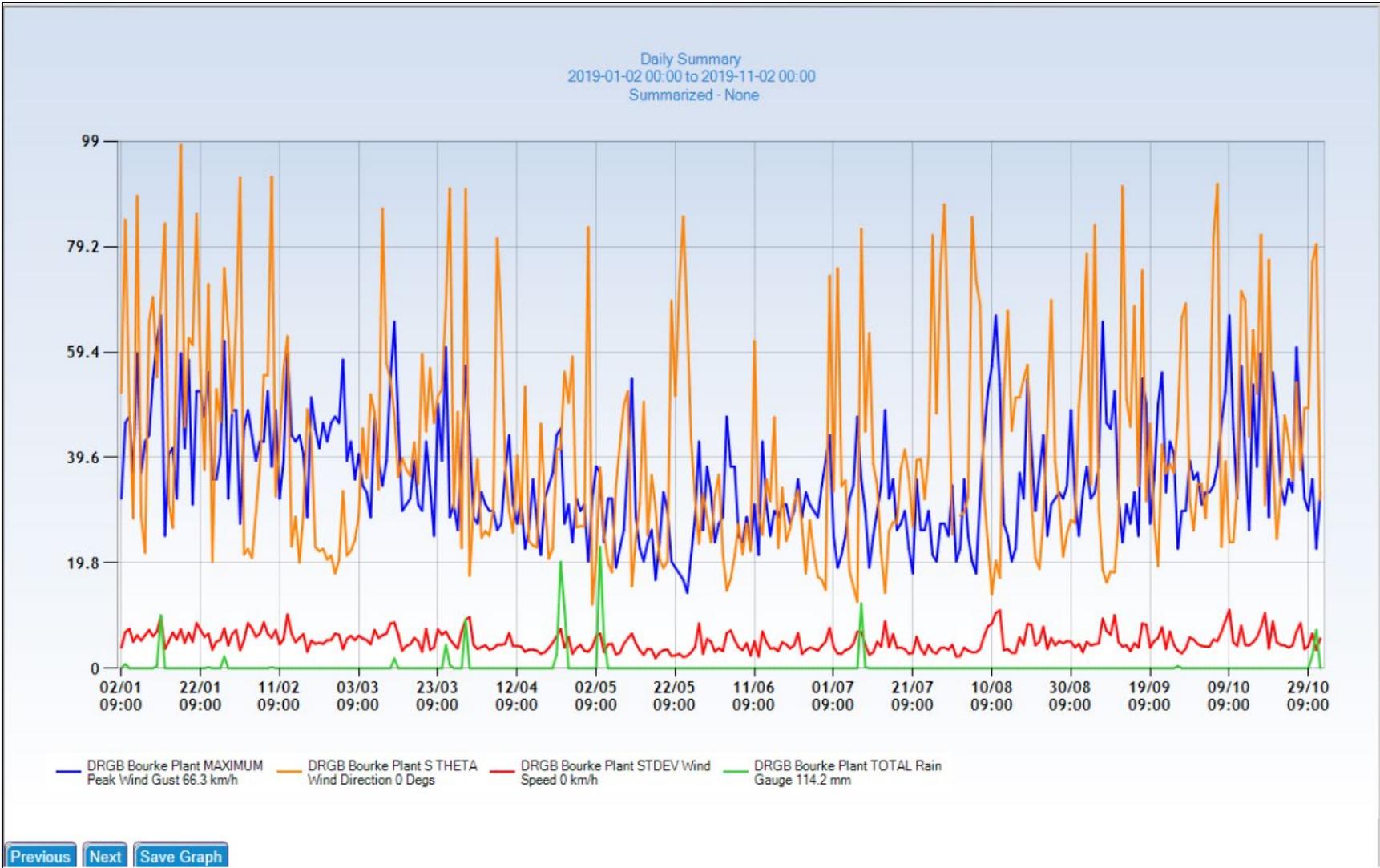
Below is a table summary of statutory and OEMP requirements, EIS predictions, and comments on performance for current reporting period and previous reporting period.

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results																														
Air quality – operational phase	<p>The Applicant shall ensure the Development complies with all load limits, air quality criteria and air quality monitoring requirements as specified in the EPL for the site.</p> <table border="1" data-bbox="373 561 1285 808"> <thead> <tr> <th>Parameter</th> <th>Sampling method</th> <th>Units of measure</th> <th>Averaging period</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>Rainfall</td> <td>AM-4</td> <td>millimetres</td> <td>1 hour</td> <td>Continuous</td> </tr> <tr> <td>Wind Direction at 10 metres</td> <td>AM-2 &amp; AM-4</td> <td>Degrees</td> <td>15 minutes</td> <td>Continuous</td> </tr> <tr> <td>Wind Speed at 10 metres</td> <td>AM-2 &amp; AM-4</td> <td>metres per second</td> <td>15 minutes</td> <td>Continuous</td> </tr> <tr> <td>Siting</td> <td>AM-1 &amp; AM-4</td> <td>-</td> <td>-</td> <td>-</td> </tr> <tr> <td>Sigma Theta</td> <td>AM-2 &amp; AM-4</td> <td>degrees Celsius</td> <td>-</td> <td>Continuous</td> </tr> </tbody> </table> <p>OEMP requires continuous climate monitoring data that shows rainfall, wind direction and wind speed.</p>	Parameter	Sampling method	Units of measure	Averaging period	Frequency	Rainfall	AM-4	millimetres	1 hour	Continuous	Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous	Wind Speed at 10 metres	AM-2 & AM-4	metres per second	15 minutes	Continuous	Siting	AM-1 & AM-4	-	-	-	Sigma Theta	AM-2 & AM-4	degrees Celsius	-	Continuous	The predicted ground level odour concentrations at the nearest receptors are considered to be 6.0 OU (5 OU is a typical concentration for a faint odour).	Refer to Table 1 for continuous monitoring results as required.  No odour complaints have been received for the entire reporting period.	Refer to Table 2 for previous monitoring results (data started on commencement of operation since 2 January 2019).  No odour complaints were received for the entire reporting period, although one odour lead incident was recorded with no impact on the environment.
Parameter	Sampling method	Units of measure	Averaging period	Frequency																														
Rainfall	AM-4	millimetres	1 hour	Continuous																														
Wind Direction at 10 metres	AM-2 & AM-4	Degrees	15 minutes	Continuous																														
Wind Speed at 10 metres	AM-2 & AM-4	metres per second	15 minutes	Continuous																														
Siting	AM-1 & AM-4	-	-	-																														
Sigma Theta	AM-2 & AM-4	degrees Celsius	-	Continuous																														

Refer to below two pictures for graphic presentation of climate monitoring data for current reporting period and previous reporting period respectively.



(Table 1: current reporting period)



(Table 2: previous reporting period)

Key analytical and/(or) trend insights and implications are summarised as follows:

- All weather data were assessed to be normal and consistent with changes in external weather over the assessed periods, and therefore no trend/key management implications have been identified.
- As there was no odour complaint received due to temporary shut for the current reporting period, no material discrepancy was observed between predicted impact versus actual impact.
- No environmental improvement measures have been determined necessary to be implemented over the next reporting period.

### Noise Monitoring

Below is a table summary of statutory and OEMP requirements, EIS predictions, and comments on performance for current reporting period and previous reporting period.

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results																				
Noise – Operational Noise	<p>The Applicant shall ensure the noise generated by the operation of the Development does not exceed the noise limits in table below (in dB).</p> <table border="1"> <thead> <tr> <th>Time period</th> <th>Measurement parameter</th> <th>Measurement frequency</th> <th>Noise level dB(A)</th> </tr> </thead> <tbody> <tr> <td>Day</td> <td>Day-LAeq (15 minute)</td> <td>-</td> <td>35</td> </tr> <tr> <td>Evening</td> <td>Evening-LAeq (15 minute)</td> <td>-</td> <td>35</td> </tr> <tr> <td>Night</td> <td>Night-LAeq (15 minute)</td> <td>-</td> <td>35</td> </tr> <tr> <td>Night</td> <td>LAmx</td> <td>-</td> <td>45</td> </tr> </tbody> </table> <p>OEMP requires noise monitoring only if a noise complaint is received.</p>	Time period	Measurement parameter	Measurement frequency	Noise level dB(A)	Day	Day-LAeq (15 minute)	-	35	Evening	Evening-LAeq (15 minute)	-	35	Night	Night-LAeq (15 minute)	-	35	Night	LAmx	-	45	Based on the conservative assumptions, the noise level from operation of the project is predicted to be LAeq(15-min) 33 dB at the nearest residence to the site. Hence, operational noise emission levels are predicted to meet the project specific noise criteria of LAeq(15-min) 35 dB without the	No monitoring data is required due to no noise complaint received.	No monitoring data was required due to no noise complaint received.
Time period	Measurement parameter	Measurement frequency	Noise level dB(A)																					
Day	Day-LAeq (15 minute)	-	35																					
Evening	Evening-LAeq (15 minute)	-	35																					
Night	Night-LAeq (15 minute)	-	35																					
Night	LAmx	-	45																					

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
		inclusion of additional noise mitigation.		

Key analytical and/(or) trend insights and implications are summarised as follows:

- No trend/key management implications have been identified due to no noise complaints reported beyond the premises.
- As there was no noise complaint received due to temporary shut for the current reporting period, no material discrepancy was observed between predicted impact versus actual impact.
- No environmental improvement measures have been determined necessary to be implemented over the next reporting period.

### Water and Wastewater Monitoring

Below is a table summary of statutory and OEMP requirements, EIS predictions, and comments on performance for current reporting period and previous reporting period.

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
Water and Wastewater	<p>Prior to the commencement of operation, the Applicant shall prepare a Water Management Plan (WMP) to the satisfaction of the Department. The WMP shall form part of the OEMP in Condition D3 and be prepared in accordance with Condition D5.</p> <p>For each discharge point or utilisation area specified below (by a point number), the volume/mass of:</p> <p>a) liquids discharged to water; or b) solids or liquids applied to the area;</p>	Given the absence of surface water drainage lines in and surrounding the project site, no impacts to surface water	Refer to p.1 of <b>Appendix 14</b> for 2020 groundwater monitoring result and <b>Appendix 11</b> for examples	Refer to pp.2-3 of <b>Appendix 14</b> for previous results for groundwater monitoring and initial range of

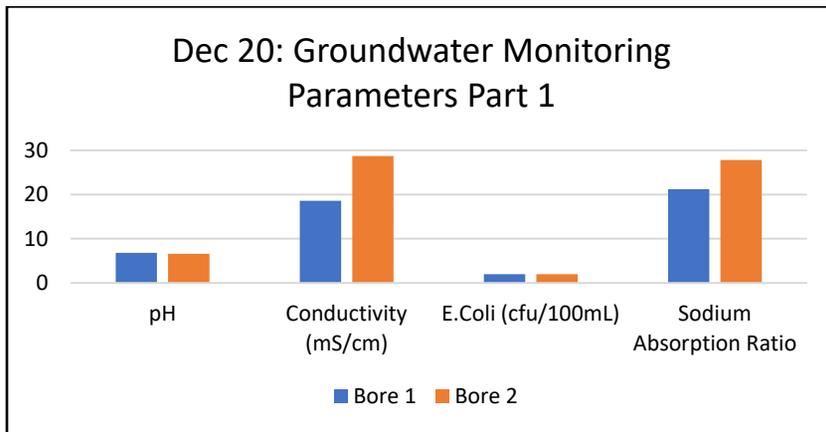
Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results																		
	<p>must not exceed the volume/mass limit specified for that discharge point or area.</p> <table border="1" data-bbox="390 396 1272 488"> <thead> <tr> <th>Point</th> <th>Unit of Measure</th> <th>Volume/Mass Limit</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>kilolitres per day</td> <td>1550</td> </tr> </tbody> </table> <p>Surface water monitoring: 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.</p> <table border="1" data-bbox="390 724 1272 891"> <thead> <tr> <th>Pollutant</th> <th>Units of Measure</th> <th>50 Percentile concentration limit</th> <th>90 Percentile concentration limit</th> <th>3DGM concentration limit</th> <th>100 percentile concentration limit</th> </tr> </thead> <tbody> <tr> <td>Total suspended solids</td> <td>milligrams per litre</td> <td></td> <td></td> <td></td> <td>50</td> </tr> </tbody> </table> <p>OEMP requires the following monitoring frequency for water management:</p> <ul style="list-style-type: none"> <li>• Fortnightly water cycle monitoring</li> <li>• Daily during irrigation for effluent quantity</li> <li>• Quarterly effluent quality monitoring</li> <li>• Daily during discharge for surface water</li> <li>• Annual groundwater monitoring</li> <li>• Annual crop monitoring</li> </ul> <p>Water movement will be monitored by recording the following flow meters fortnightly:</p>	Point	Unit of Measure	Volume/Mass Limit	6	kilolitres per day	1550	Pollutant	Units of Measure	50 Percentile concentration limit	90 Percentile concentration limit	3DGM concentration limit	100 percentile concentration limit	Total suspended solids	milligrams per litre				50	<p>resources are anticipated.</p> <p>Drilling conducted on site found no groundwater to 8.8 m. During construction, excavation will be required for construction of the wastewater treatment ponds; however this excavation will not exceed 3 m. No interception of groundwater is anticipated.</p> <p>The effluent from the abattoir will be treated and classified as low to moderate strength effluent according to the DEC (2004) classification system, and</p>	<p>of water cycle monitoring.</p> <p>Note, only the potable meter and raw water meter have readings for this reporting period as the other four meters do not have readings due to no irrigation on site.</p> <p>Management representation finds that all flow meter readings appear to be normal.</p> <p>All groundwater parameters were within the predicted range.</p>	<p>groundwater monitoring parameters, and <b>Appendix 11</b> for examples of water cycle monitoring.</p> <p>Note, only the potable meter and raw water meter had readings for this reporting period as the other four meters did not have readings due to no irrigation on site.</p> <p>Management representation finds that all flow meter readings appear to be normal.</p> <p>All groundwater</p>
Point	Unit of Measure	Volume/Mass Limit																				
6	kilolitres per day	1550																				
Pollutant	Units of Measure	50 Percentile concentration limit	90 Percentile concentration limit	3DGM concentration limit	100 percentile concentration limit																	
Total suspended solids	milligrams per litre				50																	

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
	<ul style="list-style-type: none"> <li>• Meter No. 1: Potable water meter</li> <li>• Meter No. 2: Raw water meter</li> <li>• Meter No. 3: Raw effluent flow meter downstream of primary solids removal</li> <li>• Meter No. 4: Irrigation pump meter</li> <li>• Meter No. 5: Tailwater pump meter</li> <li>• Meter No. 6: Stormwater retention pond pump meter</li> </ul> <p>Effluent monitoring samples will be analysed for the following parameters:</p> <ul style="list-style-type: none"> <li>• pH;</li> <li>• Electrical conductivity;</li> <li>• Kjeldahl nitrogen;</li> <li>• Ammonia;</li> <li>• Nitrite/Nitrate;</li> <li>• Total nitrogen;</li> <li>• Orthophosphate;</li> <li>• Total phosphorus;</li> <li>• Potassium, sodium, calcium and magnesium;</li> <li>• SAR;</li> <li>• Total suspended solids; and</li> <li>• Biochemical oxygen demand.</li> </ul> <p>Groundwater will be monitored at MW1 and MW2 for the following parameters:</p> <ul style="list-style-type: none"> <li>• Standing water level, mbgl</li> <li>• Temperature, °C (field)</li> <li>• Electrical conductivity, dS/m or mS/cm (field)</li> <li>• Nitrate</li> <li>• Phosphorus (total)</li> <li>• Phosphate</li> </ul>	<p>irrigated on crops within the project site. Phosphorus, nitrogen and BOD concentrations have been estimated based on data provided by the wastewater treatment system supplier for the project, identifying nitrogen to be a limiting factor for irrigation. The required irrigation area is 38 ha. The assessed application area is suitable for the reuse of effluent by irrigation. Site limitations will require adoption of mitigation</p>	<p>As operations (and the temporary shut) have not yet produced waste water volumes sufficient to require irrigation as per the Irrigation Management Plan.</p> <p>Further, irrigation monitoring programs has not commenced as a result of no irrigation.</p> <p>Therefore, no irrigation monitoring data (i.e., effluent monitoring data and crop monitoring data) is</p>	<p>parameters were within the predicted range.</p> <p>As the irrigation system was not installed, there is no monitoring data for effluent quantity or effluent quality.</p> <p>There was no monitoring required for surface water as there was no discharge observed for the entire reporting period.</p> <p>No crop monitoring was required due to no</p>

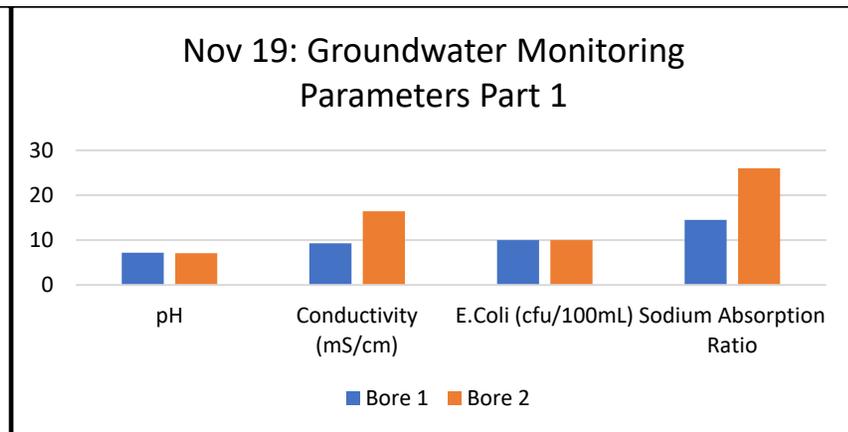
Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
	<ul style="list-style-type: none"> <li>• Total dissolved solids (TDS)</li> <li>• pH</li> </ul> <p>Visual assessment of crops growing within the effluent irrigation area will be undertaken. Crops will be monitored for signs of soil toxicity or degradation. Crop yield will be estimated based on the number and average weight of bales removed. One representative crop sample will be analysed for moisture content, nitrogen and phosphorous.</p>	<p>measures such as irrigation scheduling, maintenance of vegetation by crop rotations and regular application of gypsum or lime.</p> <p>Monitoring of vegetation will be undertaken on an annual basis. This will involve visual assessments of crop species and bare areas to provide an indication of the presence of soil toxicities and soil degradation.</p>	<p>available for assessment.</p> <p>There is no monitoring required for surface water due to no discharge observed for the entire reporting period.</p> <p>It is anticipated that monitoring of vegetation will be carried out once crops are grown (contingent on the installation of pivot irrigation system and sufficient effluents to be treated on site). Visual inspections and soil sampling will be taken from</p>	<p>irrigation system or irrigation on site.</p>

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
			crop species and bare areas to assess levels of soil toxicity and soil degradation, as per OEMP v8.1.	

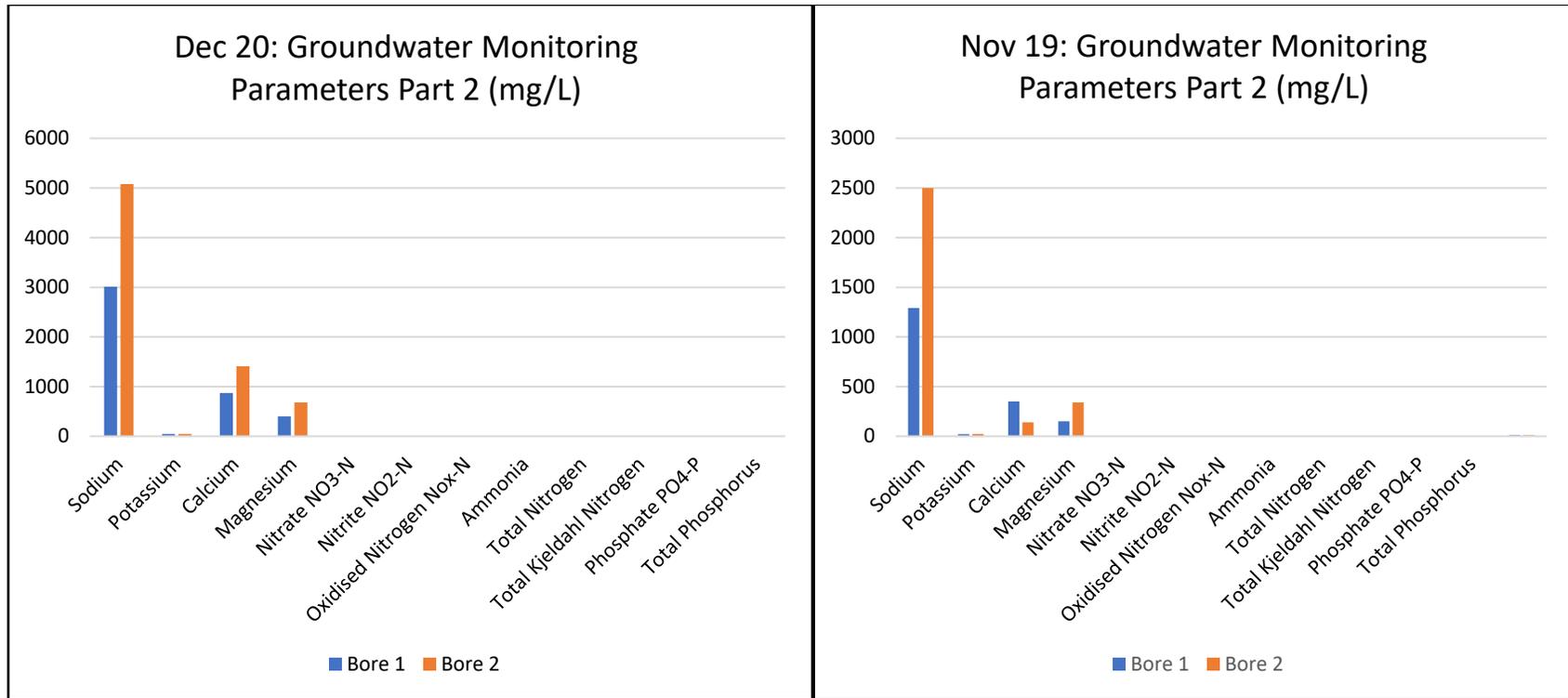
Refer to below four pictures for graphic presentation of groundwater monitoring data for current reporting period and previous reporting period respectively.



(Table 3: current reporting period.)



(Table 4: previous reporting period.)



(Table 5: current reporting period.)

(Table 6: previous reporting period.)

Key analytical and/(or) trend insights and implications are summarised as follows:

- All water data were assessed to be normal and within maximum limits over the assessed periods. Records inspected show that some parameters related to sodium appeared to be higher, indicating an increase in soil salinity when compared with previous reporting periods. Also, some parameters (e.g., potassium, Nitrite NO2-N, etc.) were below the minimum historical results potentially due to severe drought experienced over the reporting period. Management considers the environmental risks of non-compliance are negligible.
- As there was no water complaint received due to temporary shut for the current reporting period, no material discrepancy was observed between predicted impact versus actual impact.
- No environmental improvement measures have been determined necessary to be implemented over the next reporting period.

## Biodiversity

Below is a table summary of statutory and OEMP requirements, EIS predictions, and comments on performance for current reporting period and previous reporting period. Note, DPIE issued a Show Cause Letter regarding Condition C8 of Development Consent SSD7268 on 15 February 2021. As this letter is related to the compliance obligations relating to the Consent rather than data monitoring per se, the Proponent's response is not covered in this document and please refer to **Appendix 4** for more details and the latest response the Proponent sent to DPIE on 9 March 2021.

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
Biodiversity	<p>Within 12 months of the operation of this development consent, the Applicant shall purchase and retire 2,068 Ecosystem Credits to offset the removal of 55.3 hectares of native vegetation as calculated in the Biodiversity Assessment Report, prepared by EMM (EIS, Appendix I).</p> <p>Any proposed management activities shall be in addition to other obligations for conservation that are attached to the land such as actions being carried out under a Property Vegetation Plans.</p>	<p>The project will involve the following direct impacts:</p> <ul style="list-style-type: none"> <li>• Clearing of native vegetation, approximately 9.6 ha of shrubby woodland and 45.7 ha of derived shrubland of Poplar Box - White Cypress Pine - Wilga - Ironwood Shrubby Woodland;</li> <li>• Loss of hollow-bearing trees in the 9.6 ha of shrubby woodland;</li> <li>• Minor loss of potential hunting/foraging habitat for the threatened animals; and</li> <li>• Edge effects, including increased light and a decrease in competition which, in the absence of mitigation, may lead to weed invasion in the shrubby woodland.</li> </ul> <p>The project may involve the following indirect impacts:</p>	<p>The direct impacts of the project were covered and addressed in the biodiversity offset strategy and biobanking agreement (both were approved by Office of Environment and Heritage). The Proponent continued to ensure the site is clear of vegetation.</p> <p>Refer to comments on Conditions C8-C9 in the Annual Review and <b>Appendix 4</b> for current progress of credit retirement. Note, only passive management actions are required until at least 80% of the Total Fund Deposit has been received for the first time.</p> <p>In terms of the indirect impacts, there has been no noticeable increase in</p>	<p>The direct impacts of the project were covered and addressed in the biodiversity offset strategy and biobanking agreement (both were approved by Office of Environment and Heritage). The Proponent continued to ensure the site is clear of vegetation.</p> <p>There was no progress on credit retirement in the previous reporting period.</p> <p>In terms of the indirect Impacts, site preparation and vegetation clearing were completed and</p>

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
		<ul style="list-style-type: none"> <li>• Generation of higher noise levels during vegetation clearing, construction and operation, which may deter fauna from using retained habitat in the area. It is expected that fauna would acclimatise to the noise over time and recolonise the area;</li> <li>• A minor increase in fauna strike, particularly for Kangaroos and Wallabies, as result of a minor increase to traffic volume on the Mitchell Highway; and</li> <li>• Attraction of wetland birds to the water treatment ponds, provided that the anaerobic ponding process is effectively managed.</li> </ul> <p>EPBC Act matters: As per the EIS, no species listed under the EPBC Act were recorded in the study area.</p> <p>Furthermore, five nationally important wetlands surround the project including The Dry Lake (17 km north), Bottom Lila Lake (26 km east) Birdsnest Swamp,</p>	<p>fauna strike observed. No increase in the volume of wetland birds on the water treatment ponds was observed. Therefore, no environmental safeguard measures regarding fauna injury or mortality were required to be implemented as suggested in Table 11.2.</p> <p>Refer to Water and Wastewater Monitoring Section above on effluent management study implementation status and also Section 8 of the current Annual Review for erosion and sediment control measures implemented.</p> <p>Also refer to <b>Appendix 3a</b> and <b>Appendix 3b</b> for Annual Report 2019-20 lodged to Biodiversity Conservation Trust and ongoing monitoring data on passive management actions implemented in 2020.</p>	<p>the vegetation plan was approved prior to construction phase.</p> <p>No noticeable increase in fauna strike was observed. No increase in the volume of wetland birds to water treatment ponds was observed.</p> <p>Refer to water monitoring on effluent management study implementation status and also Section 8 of Annual Review 2017-19 for erosion and sediment control measures implemented.</p> <p>All passive management activities required were implemented and reported to Biodiversity Conservation Trust in the first Annual Report lodged. Refer</p>

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
		<p>Racecourse Swamp and Toms Lake (35 km north west) of the project site, respectively. As no waterways are present in the study area that connect to these wetlands, and impacts will be confined to the study area, the potential for impacts is low. Downstream impacts to the nationally important wetlands are not expected to result from the project as erosion and sediment controls will be installed and maintained during construction of the project, and nutrient levels will be appropriately managed in the wastewater treatment and irrigation system, provided this is operated in accordance with the recommendations of the effluent management study.</p> <p>The management and mitigation measures in Table 11.2 will be implemented to minimise impacts of the project on biodiversity values (refer pp.140-141).</p>		<p>comments under Conditions C8-C9 of Annual Review 2017-19 for details reported in the previous reporting period.</p>

Key analytical and/(or) trend insights and implications are summarised as follows:

- As by BCT direction, the proponent was required to carry out passive management activities for the entire reporting period of this Annual Review and from investigations this was confirmed to be the case. Therefore, no monitoring data was required to be collected and assessed (as they were part of the requirements under active management).
- As there was no biodiversity related complaint received due to temporary shut for the current reporting period, no material discrepancy was observed between predicted impact versus actual impact.
- No environmental improvement measures have been determined necessary to be implemented over the next reporting period.

### Heritage

Below is a table summary of statutory and OEMP requirements, EIS predictions, and comments on performance for current reporting period and previous reporting period.

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
Heritage	<p>Prior to the commencement of construction and prior to any ground works within the irrigation area, the Applicant shall undertake Aboriginal heritage pre-clearance surveys within the irrigation area in accordance with the survey methodology outlined in the EIS.</p> <p>If any archaeological relics are uncovered during the course of construction of the Development, then all works shall stop immediately in that area and the OEH Heritage Branch contacted.</p> <p>If any Aboriginal objects are uncovered during work, excavation or disturbance of the work area, work must stop immediately and the Regional Operations Group of the OEH, Council and the RAPs are to be consulted.</p> <p>Prior to the commencement of operation, Applicant shall prepare an Aboriginal Cultural Heritage Management Plan (ACHMP) to the satisfaction of the Department.</p>	<p>Out of the 25 Aboriginal sites identified during the archaeological survey, 12 will experience total loss and six will be subject to partial loss. The remaining seven are outside the area of disturbance and will not be affected.</p> <p>No substantial cumulative impact is identified as a result of the</p>	<p>As the pre-clearance surveys and artefacts were related to construction phase, it is not relevant to the current reporting period.</p> <p>Communication with Phillip Sullivan on 14 December 2020 finds that he still possesses the artefacts discovered on</p>	<p>ACHMP (now as part of the OEMP) was developed and approved by the Secretary on 20 September 2018 to ensure all information about the Aboriginal history of the area is not lost.</p> <p>Artefacts discovered on site are held by Phillip Sullivan (Bourke Aboriginal</p>

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
		project. The footprint of the project relative to the landscape form, at 55.3 ha, is small.	site and is happy to continue storing them in his own residence until the completion of site construction activities.	Health Services Officer). Refer to commentary under Conditions C41-C45 of the Annual Review 2017-19 for more details.

Key analytical and/(or) trend insights and implications are summarised as follows:

- No trend/key management implications have been identified due to no additional observations of artefacts on site.
- As there was no heritage related complaint received due to temporary shut for the current reporting period, no material discrepancy was observed between predicted impact versus actual impact.
- No environmental improvement measures have been determined necessary to be implemented over the next reporting period.

### Visual Amenity

Below is a table summary of statutory and OEMP requirements, EIS predictions, and comments on performance for current reporting period and previous reporting period.

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
Visual Amenity	<p>The Applicant shall ensure the lighting associated with the Development:</p> <p>a) complies with the latest version of AS 4282 (INT) – Control of Obtrusive Effects of Outdoor Lighting; and</p> <p>b) is mounted, screened and directed in such a manner that it does not create a nuisance to surrounding properties or the public road network.</p>	<p>As per the EIS, it was determined that the only viewpoint likely to be impacted by the project is the Mitchell Highway.</p> <p>Considering the abattoir will be setback approximately 500 m back from the highway and users are typically travelling at high speeds (110 km/hr) the potential impact on visual amenity from this viewpoint is considered to be negligible.</p>	<p>No obtrusive effects of outdoor lighting have been observed or reported as a result of temporary shut.</p>	<p>No obtrusive effects of outdoor lighting were observed or reported during the operation hours.</p>

Key analytical and/(or) trend insights and implications are summarised as follows:

- No trend/key management implications have been identified as the project has negligible visual amenity impacts to travellers on the Mitchell Highway and no evident impacts to nearby residences.
- As there was no visual amenity related complaint received due to temporary shut for the current reporting period, no material discrepancy was observed between predicted impact versus actual impact.
- No environmental improvement measures have been determined necessary to be implemented over the next reporting period.

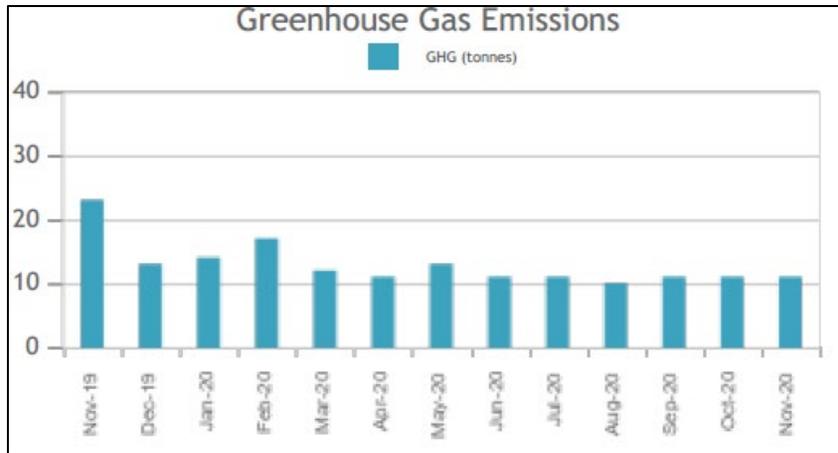
## Greenhouse Gases (GHG)

Below is a table summary of statutory and OEMP requirements, EIS predictions, and comments on performance for current reporting period and previous reporting period.

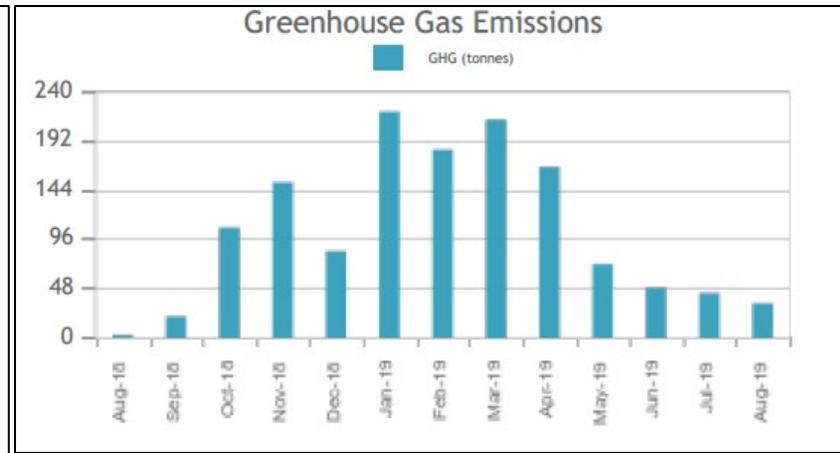
Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
Greenhouse Gases (GHG)	<p>Regular checks of seals on all refrigerated areas will be undertaken as part of routine site maintenance.</p> <p>Where possible, high efficiency lighting will be used.</p> <p>The option of installing solar panels at the abattoir will be assessed and determined within three years of commencement of operations.</p> <p>No specific OEMP Program/Plan requires monitoring for greenhouse gases.</p>	<p>The total operational GHG emissions for the project are estimated to be 19,314 t CO<sub>2</sub>-e per year. Of this only 5,445 t CO<sub>2</sub>-e are direct (Scope 1) emissions, which is associated with the consumption of liquefied natural gas and the production of methane during the wastewater treatment process.</p> <p>The assessment has determined Scope 1, 2 and key Scope 3 GHG emission estimates for the operation of</p>	<p>The actual GHG emission during this reporting period was ~145 t CO<sub>2</sub>-e, which is significantly less than the predicted 19,314 t CO<sub>2</sub>-e per year. It is anticipated the GHG emission will be minimal until the abattoir re-commences operations.</p>	<p>The actual GHG emission reported was ~1,336 t CO<sub>2</sub>-e, which was significantly less than the predicted 19,314 t CO<sub>2</sub>-e per year.</p>

Aspect	Statutory Requirements/Criteria and OEMP Requirements	EIS Predictions	Current Period Results	Previous Period Results
		<p>the project, and found the emissions to be minimal, particularly when compared to the emissions from the state of NSW as a whole.</p> <p>Annual emissions were predicted to be 19,314 t CO<sub>2</sub>-e from the proposed abattoir. Importantly this represents just 0.01% of the GHG emissions from NSW.</p>		

Refer to below two pictures for graphic trend of GHG monitoring data for current reporting period and previous reporting period respectively. Also refer to **Appendix 9** for full electricity reports for both reporting periods.



(Table 7: current reporting period.)



(Table 8: previous reporting period)

Key analytical and/(or) trend insights and implications are summarised as follows:

- Total greenhouse gas emissions were significantly reduced in the current reporting period, compared with previous reporting period as a result of temporary shut for the entire reporting period, versus the previous period where the temporary shut (which occurred in May 2019) only partially covered the reporting period.
- Both actual results are significantly lower than EIS prediction, predominantly impacted by the temporary shut. As there was no GHG related complaint received for the current reporting period, no material discrepancy was observed between predicted impact versus actual impact.
- No environmental improvement measures are required to be implemented over the next reporting period. The project is anticipated to have minimal greenhouse gases emission until operations re-commence.