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The Acting Team Leader
Industry Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2000

By email: emma.barnet@planning.nsw.gov.au

Attention: Emma Barnet

Dear Ms Laguna

Re SSD 6619

I refer to your electronic mail dated 1 August 2018 to the Environment Protection Authority (EPA) requesting our comments on the State Signification Development application submitted to the Department of Planning and Environment proposing the expansion of the existing Enirgi Power Storage Recycling Pty Ltd's used lead acid battery recycling facility located at Bomen near Wagga Wagga.

We have reviewed the environmental impact statement and specialist consultant reports supporting the application. Based on issues identified with the air, waste, dangerous goods and associated hazards, human health, contamination and water management assessments, we are currently unable to fully assess the potential environmental impacts of the proposal or support approval of the project.

For the EPA to fully assess the environmental impacts of the proposal we require additional information about the proposal to be submitted for our review. The requested information is detailed at Attachment A with justification and further detail provided in Attachment B.

Please note we have contacted Darren Nelson from Enirgi Power Storage Recycling Pty Ltd and discussed our concerns with him. We have also offered to meet with the proponent and their consultant to discuss these issues further.

If you have any further enquiries about this matter please contact Amanda Baldwin by telephoning 02 6969 0700 or by electronic mail at riverina.farwest@epa.nsw.gov.au.

Yours sincerely

30/8/18

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ATTACHMENT A

The EPA has reviewed the environmental impact statement (EIS) and appendices supporting the State Significant Development application for the proposed expansion at Enirgi Power Storage Recycling Pty Ltd's lead acid battery recycling facility (the facility) in Bomen, NSW.

Based on the information provided, we cannot adequately assess the potential impacts of the proposal. In order to fully assess these impacts of we require the following additional information.

Air Quality Impact Assessment

1. A detailed process description needs to be provided to adequately characterise emission sources and the emission inventory.
2. An assessment of the predicted impact for all identified receptors, including industrial/commercial receptors.
3. Tabulated predicted ground level concentrations for air toxics predicted at or beyond the boundary of the premises.
4. A revision of the air quality impact assessment to including clarification and assessment of all emission discharge points, an assessment of Type 1 and Type 2 substances emitted from the process individually, consider a minimum of four most recent stack test reports and include stack emission test reports within the assessment.
5. The assessment should include further information on the proposed discharge points including adequate justification and supporting information for the parameters adopted within the assessment.
6. The assessment should be revised to include robust justification for emissions estimates. This should include manufacturing specifications, emission guarantees or performance data for new or modified emission sources.
7. Emissions for all new proposed or existing modified emission discharges must be demonstrated to comply with the Protection of the Environment Operations (Clean Air) Regulation 2010.
8. Identification and implementation of all feasible and reasonable best practice mitigation measures.
9. Detailed information on plant and activities designed to control emissions such as the wheel wash, washing down of equipment and factory door management

Waste

1. Detailed information on the location and controls proposed for onsite storage, transport and handling of immobilised waste.
2. Detailed information to demonstrate the transportation of immobilised waste will occur in a manner that will prevent or minimise fugitive emissions to the maximum extent practicable.

Dangerous Goods and Preliminary Hazard Assessment

1. Detailed information on all processes and activities that have the potential to result in hazards. A comprehensive review of each process and activity should be undertaken to demonstrate all potential significant hazards have been identified and mitigated.
2. Clarification and additional information in relation to oxygen generation for the project.
3. Detailed information on the potential impacts and mitigation measures associated with the proposed chemical warehouse and proposed new building containing the salt purification area.
4. Detailed information on the design and layout of the proposed used lead acid battery and chemical storage area.

Contingency Measures

Additional information to demonstrate contingency measures have been identified and can be implemented to prevent adverse impacts.

Human Health Assessment

Additional information to demonstrate health risks associated with the project have been comprehensively assessed.

Contaminated Site Assessment

Further investigations are required to determine the extent of lead contamination east of ring road at the premises with recommended management and remediation activities.

Integrated Water Management System

1. Further information is required about the proposed capacity of the waste water storage basins.
2. Further information needs to be provided about the proposed irrigation of waste water at the premises.

Further details and justification explaining the request for additional information outlined above is provided in Attachment B.

ATTACHMENT B

Justification and further clarification of additional information

Air Quality Impact Assessment

The EPA has reviewed the Air Quality Impact Assessment (the AQIA) and has identified several issues, detailed below, which require addressing or clarification through the provision of a revised assessment.

1. *A detailed process description needs to be provided to adequately characterise emission sources and the emission inventory*

Section 4.2 of the Environmental Impact Statement (EIS) provides a description of the process proposed to process Used Lead Acid Batteries (ULAB). The following is noted.

- Figure 4-5 provides a process flow diagram of the paste desulphurisation, sodium sulphate purification, and crystallisation process. One discharge point is noted (caustic scrubber);
- Figure 4-6 provides a process flow diagram for the smelting process and outlines an emission discharge through a baghouse. The EIS describes two furnaces for processing material for recovery of lead and shows the location of 3 furnace baghouses in Figure 11.

Section 1.1. of the AQIA describes the following.

- A new building to the east of the current facility will contain a new salt storage, crystallisation area, purification and scrubber; and
- The existing facility will undergo some upgrades to include a new furnace to supplement the existing furnace, a new filter baghouse and exhaust stack, modified battery breaker to increase capacity.

Section 4.1 of the AQIA provides information on the emissions associated with the current and proposed project. Section 4.1 advises that the project will have one new discharge referred to as the "*hygiene air from the new hygiene baghouse*". Table 4-2 lists the proposed discharge points. Presumably this includes both existing and proposed sources however it is not clearly described.

However, Section 7 of the AQIA also advises "*the site currently has emission controls in place which will be applied to duplicated emission sources as part of the Project*". It is not clear which emission sources are duplicated if the project has one new discharge point. Additionally, it is unclear if addition of another furnace will include a duplicated discharge point for this furnace, and hence if emissions from both furnaces have been accounted for and assessed.

Table 4-6 lists proposed air pollutant emission estimates (i.e. the emissions inventory). It is not clear how the emissions inventory adequately captures all processes, emission discharges and the relationship between existing and proposed infrastructure. For example, the EIS describes two furnaces for ULAB processing and describes three (3) furnace baghouses, however it is understood only a single new discharge point is proposed (referred to as the hygiene bag house). It is not clear if this discharge point is associated with fugitive emission capture and control or for furnace emissions capture and control (for the additional furnace proposed). Additionally, it is unclear as to which source represents the new scrubber is stated in Section 1.1. of the AQIA.

No detailed process description describing the discharge points is included to reconcile differences in the EIS and the AQIA. For example (but not limited to) the AQIA does not describe -

- What unit operations are associated with each discharge point, and which discharge point is associated with which part of the process as described in Section 4.2 of the EIS. This includes describing how emissions from the two furnaces will be discharged to atmosphere.
- What emission controls are associated with each discharge point, including the emission performance of these emission controls.
- How fugitive emissions are currently and proposed to be managed.

To understand the assessed emission discharges a more robust description should be included within the AQIA.

Recommendation: The assessment be revised to include a robust process description including:

- ***adequate characterisation of all emission sources for the emission inventory and assessed emissions; and***
- ***clarification that all existing and proposed sources have been adequately accounted for and assessed.***

2. *An assessment of the predicted impact for all identified receptors, including industrial/commercial receptors.*

Figure 2-2 of the assessment identifies six (6) residential receptors and one (1) industrial receptor (located to the north of the existing site). However, the assessment only presents tabulated predicted ground level concentrations for the identified residential receptors at Table 6-1 and Table 6-2. Additionally, there appears to be receptors located to the south west, and a receptor directly to the south east of the site.

The assessment should present tabulated ground level concentrations for each receptor, including industrial/commercial receptors.

Recommendation: Predicted ground level concentrations be tabulated and presented for all identified receptors, including identified industrial/commercial receptors and other identified receptors at the south east and south west.

3. *Tabulated predicted ground level concentrations for air toxics predicted at or beyond the boundary of the premises.*

The assessment presents tabulated predicted ground level concentrations for those pollutants assessed at the identified residential receptors. However, the impact assessment criteria for air toxics contained in the *Approved Methods for Modelling and Assessment of Air Pollutants in NSW* applies at and beyond the site boundary. The assessment should present tabulated ground level concentrations for air toxics predicted at or beyond the site boundary (i.e. across the modelling domain).

Recommendation: The assessment be revised to include the predicted ground level concentrations predicted at or beyond the site boundary for assessment of air toxic pollutants.

4. *A revision of the air quality impact assessment to including clarification and assessment of all emission discharge points, an assessment of Type 1 and Type 2 substances emitted from the process individually, consider a minimum of four most recent stack test reports and include stack emission test reports within the assessment.*

Plastics recycling

The assessment does not describe the plastics recycling, including any potential emission discharges.

Refining

The EIS includes a description of the refining operations, and outlines a number of process steps which include the addition of materials (e.g. caustic soda, iron pyrites, sulphur) to remove impurities to achieve the final product. Specifically, the EIS outlines the following refining steps.

- Softening;
- Hot mix;
- De-copper;
- De-nickel

Presumably these process steps all occur within the refining kettle(s), with potential emissions discharged through the point source tabulated within the AQIA, however it is not adequately described within the AQIA.

The AQIA assesses only nitrogen dioxide from the refining operations. It is not clear if the discharge point associated with the kettles has the potential to emit other pollutants, specifically noting that the refining process includes a number of process steps. For example, it is not clear if there is the potential to emit Type 1 and Type 2 substances through the discharge point associated with the kettle(s).

Furnaces

As discussed in Issue 1 it is not clear if emissions from both furnaces have been assessed. Table 4-3 of the AQIA tabulates the pollutants emitted from each discharge stack. It is noted that the AQIA lists sulphur dioxide (SO_2) from a single discharge point. It is not clear where emissions from the additional proposed furnace are discharged and how these have been accounted for in the assessment.

Immobilised waste storage rooms

The EIS states (Table 4-3) the Project will produce an estimated 25,400 tonnes per annum of immobilised waste which is to be stored in enclosed, designated rooms equipped with dust ventilation.

The EIS does not clarify if the dust ventilated from these rooms is filtered through the baghouse or other air pollution control equipment, or is directly emitted to the ambient air outside the rooms.

Type 1 and Type 2 substances

The assessment has compared in stack measured concentrations from a single test report in 2016, for Type 1 and Type 2 substances with the ground level impact assessment criteria contained in the *Approved Methods for Modelling and Assessment of Air Pollutants* for each Type 1 and Type 2 substances. The assessment then assesses the pollutant (beryllium) which has the highest ratio of in-stack measurements to impact assessment criteria (i.e. the pollutant with the highest potential for exceeding impact assessment criteria).

The assessment does not describe which source the test data was obtained from or describe if there are potential for Type 1 and Type 2 substances from other sources. To ensure a clear and transparent assessment of all Type 1 and Type 2 substances emitted from the process, the assessment must be revised to assess Type 1 and Type 2 substances individually.

Additionally, the assessment should consider a larger range of more recently available monitoring data rather than a single stack test report.

Recommendation: To ensure a clear and transparent provision of information and assessment, the AQIA should be revised to:

- ***Provide robust clarification and assessment of all emission discharge points, including detailed information on any air emission controls;***
- ***Provide detailed information on any air emission controls associated with ventilated air from the immobilised waste storage rooms;***
- ***Assess Type 1 and Type 2 substances emitted from the process individually;***

- ***Consider more recent and a larger number of stack reports. A minimum of 4 most recent stack test reports should be considered; and***
- ***Include stack emission test reports within the assessment.***

5. *The assessment should include further information on the proposed discharge points including adequate justification and supporting information for the parameters adopted within the assessment.*

Table 4-1 and Table 4-2 tabulate the discharge parameters for existing and proposed point source discharges respectively. It is noted that the proposed sources include an additional point source, referred to as "*Hygiene Air (Point 6)*". Additionally, it is noted that there are differences between discharge parameters for those sources that are included in both tables. For example, but not limited to:

- The source "*Main Stack (Point 2)*" has a lower flow rate and a lower exit velocity under the proposed source design parameters compared with the existing parameters;
- The source "*Scrubber (Point 1)*" has a higher flow rate and a higher exit velocity under the proposed source design parameters compared with the existing parameters; and
- The source "*Boiler #1 (Point 4)*" has a lower flow rate and a lower exit velocity under the proposed source design parameters compared with the existing parameters.

The assessment does not include supporting information or discussion on the change in discharge parameters including how the proposal is to be accommodated within the existing infrastructure at the site. The assessment should be revised to include further information on the proposed discharge points including adequate justification and supporting information for the parameters adopted within the assessment.

Recommendation: The assessment be revised to include adequate justification including supporting information for the discharge parameters. For existing point sources that are not proposed to be modified, discharge parameters should be supported by monitoring data. For proposed new or modified point sources, discharge parameters should be supported by manufacturers specifications.

6. *The assessment should be revised to include robust justification for emissions estimates. This should include manufacturing specifications, emission guarantees or performance data for new or modified emission sources.*

The assessment is based on existing Environment Protection Licence (EPL) limits. Existing EPL limits are not considered appropriate for new or modified emission sources.

The EPA's preferred emission methods, as per the Approved Methods for Modelling and Assessment of Air Pollutants in NSW, are manufacturer's design specifications or performance guarantees for proposed sources.

Recommendation: The assessment must be revised to include robust justification for emission estimates. This should consider manufactures specification, emission guarantees or performance data for new or modified emission sources.

7. *Emissions for all new proposed or existing modified emission discharges must be demonstrated to comply with the Protection of the Environment (Clean Air) Regulation 2010.*

The assessment has not demonstrated that the proposal will comply with the prescribed discharge concentrations contained within the Protection of the Environment Operations (Clean Air) Regulation 2010 (the Clean Air Regulation).

For all new proposed or existing modified discharge points the assessment must demonstrate that the proposal can meet the prescribed emission discharge concentrations contained in the Clean Air Regulation, with reference to manufactures performance specifications, emission guarantees or emission performance data.

Recommendation: Emissions for all new proposed or existing modified emission discharges must be demonstrated to comply with the Clean Air Regulation.

8. *Identification and implementation of all feasible and reasonable best practice mitigation measures*

The AQIA states that Section 4.4 and Section 7 contain details of the best practice determination of the proposal and the air quality emission control performance. However, the information provided in these sections does not provide detailed information on how the proposal will meet international best practice or BAT requirements. For example -

- it is unclear what level of control will be provided to prevent or mitigation fugitive emissions from the battery preparation and raw material preparation area/s. In addition, details of the equipment and techniques that will be implemented to mitigate fugitive emissions are not provided. Rather the EIS only states the EPSR achieves certain BAT requirements, such as use of enclosed equipment and a bag filter to reduce diffuse emissions.
- it is unclear what level of control will be provided to mitigate point source emissions of SO2 to air. Despite the AQIA stating the proposal includes operation of alkaline leaching and fixation of sulphur in the smelt phase and a baghouse which achieves a level of dry scrubbing, details are not provided on the relevant plant to be used, or the effectiveness of these methods to prevent or reduce SO2 emissions to air.

Table 4-7 of the AQIA references information from the Best Available Techniques (BAT) conclusion report for the non-ferrous metals industries, published by the European Union[1]. Specifically, the AQIA:

- References BAT emission performances for sulphur dioxide, dust and lead;
- Identifies that for sulphur dioxide emissions, BAT is to use one or a combination of the following techniques:
  - Alkaline leaching of raw materials that contain sulphur in the form of sulphate
  - Dry or semi-dry scrubber
  - Wet scrubber
  - Fixation of sulphur in the smelt phase
- Advises that the proponent propose/operate alkaline leaching and fixation of sulphur in the smelt phase; and
- Advises that the proponent will achieve the referenced emission performances.

Recommendation: The EPA considers assessment of all feasible and reasonable best practice mitigation measures should be undertaken. A consolidated and complete Best Practice Determination report should be conducted to confirm the design of the facility in is line with best management practice for all key pollutants emitted from the proposal and referenced in the Best Available Techniques (BAT) conclusion report. This should include assessing the feasibility of mitigation measures identified within the AQIA (i.e. wet scrubbing), however understood not to be proposed.

[1] *Commission Implementing Decision (EU) 2016/1032 of 13 June 2016 establishing best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the non-ferrous metals industries,* Official Journal of the European Union dated 30 June 2016.

9. *Detailed information on plant and activities designed to control emissions such as the wheel wash, washing down of equipment and factory door management.*

The EIS (Appendix L, Section 5.1) refers to the washing down of equipment internally to prevent the spread of heavy metals outside, installation of rapid opening and closing doors in higher traffic sections, keeping the factory doors closed when not in use, and a wheel wash to remove heavy metals before they are allowed to leave site. However, details of these controls, their effectiveness, and how they will be managed to ensure they are effective is not provided in the EIS.

Ineffective operation of the above controls will increase the risk of equipment, the factory, vehicles and the wheel wash becoming potential emission sources of lead and other heavy metals.

Recommendation: The EIS should be amended to provide detailed information on plant and activities designed to control emissions such as the wheel wash, washing down of equipment, and factory door management.

Waste

1. *Detailed information on the location and controls proposed for onsite storage, transport and handling of immobilised waste.*

Currently the location and controls associated with the storage of immobilised waste are unclear in the EIS.

The EIS states (Section 4.2.2) an annex will be built in the proposed plant that will house the new immobilised waste holding area, maintaining the same level of existing controls in place for containment and testing before disposal, while enabling better transportation management. However, details of the location of the annex and the current controls are not provided.

Detailed information on the controls used to transport and handle the immobilised waste onsite, for example to prevent or manage spills or leakage from the annex and contain the waste and/or any liquid resulting from water ingress into the annex should also be provided.

Recommendations: the EIS should be amended to provide detailed information on the location and controls proposed for the onsite storage, transport and handling of immobilised waste.

2. *Detailed information to demonstrate the transportation of immobilised waste will occur in a manner that will prevent or minimise fugitive emissions to the maximum extent practicable.*

The EIS states immobilised lead waste will be transported off-site in covered tipper trucks to an appropriately licenced landfill, noted as Kemps Creek Landfill in Sydney. However, the EIS does not provide any information on the type of covering required, or the effectiveness of the covering to prevent the generation and emission of fugitive emissions from the tipping body during the movement of the waste.

The EPA notes the immobilised waste is likely to contain high levels of heavy metals such as arsenic, lead and selenium. The return journey from the Project site to Kemps Creek is around 900 km and the large number of movements associated with the transport of up to 25,400 tonnes per annum of waste presents an ongoing risk of the spread of fugitive emissions over a wide area.

Recommendation: the EIS should be amended to provide detailed information to demonstrate the transportation of immobilised waste will occur in a manner that will prevent or minimise fugitive emissions to the maximum extent practicable.

Dangerous Goods and Preliminary Hazard Assessment

1. *Additional information for the assessment of dangerous goods and other hazards is required.*

   The Preliminary Hazard Assessment (PHA) includes a summary of dangerous goods to be kept on site and number of vehicle movements of dangerous goods. Dangerous goods and transport risk screening were undertaken based this information, with additional hazards identified through a desktop study focused on the operation changes as a result of the project.

   With respect to the identification of hazards and their management, the PHA includes a basic process description. However detailed process descriptions/flow diagrams and a comprehensive analysis of all potential significant hazards is not provided. In addition, hazards relevant to toxic release from wastes received and generated, are not specifically identified or considered.

   Due to the lack of information presented in the PHA, it is not possible to verify if all the potential hazards associated with the Project have been identified and appropriately assessed.

   Recommendation: the PHA should be amended to provide detailed information on all processes and activities that have the potential to result in hazards. A comprehensive review of each process and activity should be undertaken to demonstrate all potential significant hazards have been identified and mitigated.

2. *Clarification and additional information in relation to oxygen generation for the project is required.*

   The Project includes the addition of on-site oxygen generation at the oxygen generation facility at the southern extent of the Project site. Currently the EIS is inconsistent and provides limited information in relation to oxygen generation for the project and does not clarify what operations and activities are associated with on-site oxygen generation.

   Page 24 of the EIS states that oxygen used for the furnace burners and in the lead refinery will be generated onsite by separation from ambient air instead of brought in by truck as a liquid; however, Appendix K indicates that a maximum of 132.60 tonnes of liquid oxygen will be stored on site which will result in an associated 730 cumulative vehicle movements per year.

   Clarification and further detail on how oxygen will be generated at the facility should be provided.

   Should the project include the storage of liquid oxygen, it should be noted that despite liquid oxygen being DG Class 2.2, which does not have a SEPP 33 storage threshold, it is also an oxidiser under DG Class 5.1.

   The EIS and PHA do not discuss in detail any of the hazards and handling precautions associated with liquid oxygen, including those related to:

   - exposure to cold;
   - over-pressurisation, such as if equipment is inadequately vented;
   - oxygen enrichment of the surrounding atmosphere;
   - the possibility of a combustion reaction if the oxygen is permitted to contact a non-compatible material, such as flammable or combustible substances or organic substances; and
     increased susceptibility for ignition and more violent burning or explosion

   Recommendation: the EIS and PHA should be amended to clarify and provide additional information in relation to oxygen generation for the project. Should the proposal include the storage of liquid oxygen, the EIS and PHA should be amended to provide detailed information and precautions/mitigation for the handling and management of liquid oxygen.

3. *Detailed information on the potential impacts and mitigation measures associated with the proposed chemical warehouse and proposed new building containing the salt purification area is required.*

   The EPA notes a new used lead acid battery (ULAB), raw materials and chemical warehouse (the ULAB warehouse) is proposed to be built at the northern extent of the Project site. In addition, a new building containing a new salt storage, crystallisation area, purification and scrubber (the salt processing building) is proposed to be built to the east of the current facility.

   Despite the hazardous nature of the chemicals, materials and activities that will be undertaken in the ULAB warehouse and salt processing building, the EIS lacks detailed information on potential emissions and impacts associated with operations in these buildings, and on mitigation measures to be implemented to prevent or control any emissions.

   Recommendation: the EIS should be revised to provide detailed information on all hazardous activities associated with the operation of the ULAB warehouse and the salt processing building, including the mitigation measures proposed to be implemented to control emissions and prevent or minimise any adverse offsite impacts.

4. *Detailed information on the design and layout of the proposed used lead acid battery and chemical storage area.*

   Currently the EIS does not provide detailed information regarding the design of the ULAB warehouse to adequately demonstrate that the warehouse will be designed to control explosion risks and to contain leaks and spills.

   Recommendation: the EIS should be amended to include detailed information on the ULAB warehouse construction and layout with consideration to demonstrating adequate ventilation, storage of compatible chemicals and pollution control such as bunding.

Contingency Measures

The EIS does not consider or assess non-routine conditions or scenarios such as during upset, startup, shutdown and emergency periods. This is required to ensure contingency measures are identified and can be implemented to address these situations and prevent associated adverse impacts.

Recommendation: the EIS should be revised to consider and include contingency measures to address non-routine, upset, startup and shutdown, emergency and other conditions/scenarios.

Human Health Assessment

Additional information should be provided to demonstrate health risks associated with the project have been comprehensively assessed.

Currently the project's Human Health Assessment lacks a conceptual site model and other essential elements that are required to demonstrate health risks associated with the project have been comprehensively assessed.

The Project SEARs require the EIS to address specific matters associated with human health, in particular include an assessment of the potential impacts to employees at the facility and any offsite impacts.

The EPA notes the EIS and Human Health Assessment (HHA) (EIS, Appendix J) does not consider in detail the potential for any offsite impacts. Instead the EIS relies on the outcomes of the Air Quality Impact Assessment, an assessment of direct inhalation exposure impacts, which concludes that due to low air emission rates, the remote location of the facility and the absence of nearby sensitive receivers the potential for offsite health impacts from generated lead dust would be negligible.

The HHA does not include a detailed description of the sources of contaminants and potential emissions, the pathways by which these contaminants may migrate through various media, and the receptors that may potentially be exposed. This information consists of the conceptual site model for the operation and is required to aid in understanding how residents and other potential receptors may be exposed to chemicals associated with project operations. It is also required as a primary planning tool to support the human health assessment approach and methodology.

In addition, the HHA does not provide any qualitative or quantitative information to demonstrate potential exposure pathways (other than the direct inhalation of project air emissions), such as though indirect exposure to contaminants (for example via exposure to contaminated soil), are not present or not significant enough to warrant assessment.

Recommendation: the HHA should be amended to include a detailed and site specific conceptual site model for the Project, and comprehensively considers the potential for offsite impacts.

Contaminated Site Assessment

The Contaminated Site Assessment (CSA) for the project reports exceedances of the NEPM (2013) Health Investigation Levels (HIL) D for lead concentrations in soil (greater than 1500 mg/kg) at a number of locations adjacent to Ring Road at the facility. The CSA reports exceedances as high as 84,300 milligrams per kilogram (mg/kg) for lead at one sampling location.

Recommendation: the EPA recommends the Department of Planning and Environment require the proponent to undertake further investigations to adequately delineate the vertical and lateral extent of the lead impacted area east of ring road and to determine appropriate management and remediation activities prior to project approval. Investigations should also identify potential contamination source(s) and demonstrate how the project will mitigate future potential contamination from occurring.

Integrated Water Management System

1. *Further information on the proposed capacity of the waste water storage basins*

The EIS shows the current water balance involves evaporation of approximately 21.5 Megalitres (ML) of water annually. It also predicts evaporation rates to be approximately 38.8ML annually as a result of the proposal. The EIS also provides information on current water storage capacity at the premises under Appendix L: Soil and Stormwater Management Plan. The EIS shows in plans for the project some changes to the three ponds at the premises; however, does not discuss these changes in any detail.

Additional information is required to demonstrate the project has adequate water storage capacity to account for increased inflows and predicted evaporation rates. Details of any construction works to be undertaken should also be provided to demonstrate how the project will mitigate potential impacts to ground and surface water.

Recommendation: the EIS should be updated to include detailed information regarding pond storage capacity for the project and any proposed works to modify the existing ponds.

2. *Further information needs to be provided on the Irrigation of waste water*

The EIS contains a soil and storm water management plan, which includes information about irrigation activities that are currently occurring at the premises. There is also summary information about the intent to continue irrigating and the possibility of an increase in amount irrigated to between 30 – 40ML annually.

It is noted that Table 14.2 contains information about allowable application period for lead and arsenic however no further details are provided about other potential pollutants that may be present within the effluent.

The EPA notes that the EIS contains minimal information about proposed irrigation practices, including the following:

- Processes used to identify maximum effluent loading rates for all pollutants;
- Proposed frequency for irrigating,
- Wet weather storage requirements;
- Full details of the quality of the water to be irrigated,
- Crops to be grown / uses for the irrigated area;
- Likelihood of any runoff from the utilisation area, and the measures proposed to control this pollution;
- proposed monitoring of both soils within the utilisation area, groundwater and effluent quality during irrigation; and
- mitigation measures should this monitoring demonstrate elevated concentrations of pollutants.

Recommendation: the EIS should be updated to include detailed information about the proposal to irrigate waste water, include proposed monitoring of soils, effluent and groundwater and include contingencies should elevated levels of pollutants be detected.