Notice

Environmental Protection Act 1994

Information request

This information request is issued by the administering authority under section 140 of the Environmental Protection Act 1994 to request further information needed to assess an application for a site-specific environmental authority.

To: Graphitecorp Ltd  
   Level 10, 300 Ann Street  
   BRISBANE QLD 4000  
   Email: phil@graphitecorp.com.au

Cc: Mineral Assessment Hub  
   Department of Natural Resources and Mines  
   Email: mineralhub@dnrm.qld.gov.au

Cc: Natural Resource Assessments Pty Ltd  
   Email: shannon@natres.com.au  
   ATTN: Shannon Wetherall

ATTN: Philip St Baker

Our reference: 101/0021264; AR096425
Your reference: BRMN0014

Further information needed to assess an application for a site-specific environmental authority

1. Application details

   The application for a site specific environmental authority was received by the administering authority on 16 December 2016.

   The application reference number is: AR096425
   Land description: Mining lease (ML) 100121

2. Information request

   The administering authority has considered the abovementioned application and is writing to inform you that further information is needed to assess the application (an information request).

   The information requested is provided below:

   1. Groundwater:
      - Further information is required to assess the potential impacts to groundwater environmental values and to meet the requirements of s126A of the Environmental Protection Act 1994 (EP Act)
and the Departments *Guideline Requirements for site-specific and amendment applications — underground water rights (ESR/2016/3275)*. Please provide the following information:

a. for each aquifer affected, or likely to be affected, by the proposed mining activities and the exercise of underground water rights;
   i. A description of each aquifer, including;
      - hydrogeological properties;
      - aquifer type, number and flow rates (confined, unconfined, fractured etc.)
      - geology/stratigraphy (such as alluvium, volcanic, metamorphic)
      - depth to and thickness of the aquifers;
      - a description of the physical integrity of the aquifer, fluvial processes and morphology of groundwater resources;
      - depth to water level and seasonal changes in level/elevation; and
      - Hydrogeological cross sections, including;
         - affected or potentially affected aquifers;
         - the elevations and relative positions of each of these aquifers;
         - the location of water bores screened within these aquifers (if known);
         - the location of any significant faults and/or structural geological features that intersect each potentially affected aquifer; and
         - Available data on current underground water levels.

b. an analysis of the movement of underground water to and from the aquifer, including how the aquifer interacts with other aquifers and surface water, including;
   i. inputs (recharge from rainfall or other aquifers) and outputs (discharge to springs, base flow to watercourses and extraction from water bores);
   ii. contours of underground water elevations to analyse groundwater movements;
   iii. the connectivity between aquifers; and
   iv. Natural and anthropogenic preferential flow paths such as faults and abandoned water bores and exploration bores;

c. a description of the area of the aquifer where the water level is predicted to decline because of the proposed mining activities and the exercise of underground water rights, which includes;
   i. predictions for the life of the project and post-closure;
   ii. the timing, spatial extent and magnitude of maximum water level declines in affected aquifers;
   iii. the timing and magnitude of groundwater level equilibrium in affected aquifers; and
   iv. Detailed information about the groundwater model, including;
      - model type (e.g. numerical or analytical);
      - modelling platform;
      - model inputs (e.g. aquifer hydraulic properties, the extraction regime and locations of the bores/wells);
      - model boundary conditions;
      - model assumptions and limitations (including those related to connectivity between aquifers and water balance components); and
      - Details of any sensitivity analysis and/or calibration that was performed.

d. the predicted quantities of water to be taken or interfered with because of the proposed mining activities and the exercise of underground water rights during the period in which activities are carried out, which includes;
i. An estimate of the groundwater that will be extracted during the period in which the mining activities are carried out based on the projected production or extraction schedule.

e. the environmental values that will, or may, be affected by the proposed mining activities and the exercise of underground water rights and the nature and extent of the impacts on the environmental values, including an assessment of the following aspects;
   i. the magnitude, relative size or actual extent of any impact in relation to the environmental value being affected by groundwater level changes, particularly a decline in water level or change in water quality;
   ii. the vulnerability or resilience of the environmental value to the predicted impacts considering; and
      - the severity of any adverse effect; and
      - The duration of the effect, for example the impact may be seasonal, or it may end with the activity or extend beyond the cessation of the activity.
   iii. An indication of the level of uncertainty of impacts and any assumptions used to address the uncertainty in any of the data or proposed commitments to protect the environmental values.

f. any impacts on the quality of groundwater that will, or may, happen because of the proposed mining activities and the exercise of underground water rights during or after the period in which mining activities are carried out; including; and
   i. in order to determine a baseline that predicted impacts are compared to the following parameters should be measured in accordance with the requirements of the Queensland Water Quality Guidelines 2009, version 3 (relating to sampling intensity and frequency); and
      - pH;
      - electrical conductivity [µS/m];
      - turbidity [NTU];
      - total dissolved solids [mg/L];
      - temperature [°C];
      - dissolved oxygen [mg/L];
      - alkalinity (bicarbonate, carbonate, hydroxide and total as CaCO3) [mg/L];
      - anions (bicarbonate, carbonate, hydroxide, chloride, sulphate) [mg/L];
      - cations (aluminium, calcium, magnesium, potassium, sodium) [mg/L];
      - silica [mg/L];
      - dissolved and total metals and metalloids (including but not necessarily being limited to: aluminium, arsenic, barium, borate (boron), cadmium, chromium III, cobalt, copper, iron, fluoride, lead, manganese, mercury, molybdenum, nickel, selenium, silver, strontium, tin, uranium, vanadium and zinc) [µg/L];
      - total phosphorus [mg/L];
      - ammonia, nitrate, nitrite as nitrogen [mg/L]; and
      - Gross alpha + gross beta or radionuclides by gamma spectroscopy [Bq/L].

   ii. An explanation of the variation of chemical concentrations as a result of chemical reactions over the life of the project including an evaluation of the following contributing factors;
      - Magnitude of the water level decline;
- Differences in water quality in aquifers overlying and/or underlying this aquifer; and
- The connectivity between the target aquifer for resource activities and the underlying and overlying aquifer.

g. Strategies for avoiding, mitigating or managing the predicted impacts on the environmental values stated for paragraph (1)(e) or the impacts on the quality of groundwater mentioned in paragraph (1)(f).

2. Surface Water:
   - Provide a water monitoring and management plan including but not limited to;
     o A water balance model for the entire project including the pit and waste disposal facilities;
     o water management infrastructure locations, specifications and designs by a suitably qualified person;
     o the details and locations of any water release points and the character of potentially contaminated water that may be released during the life of the project;
     o receiving water monitoring locations, including the rationale for each point;
     o management measures for minimising and preventing contaminated water releases to the receiving environment; and
     o Provide details of the project's erosion and sediment control strategy, including an erosion hazard assessment.
   - provide the baseline water quality of the receiving waters in accordance with the requirements of the Queensland Water Quality Guidelines 2009;
   - propose locally derived surface water contaminant limit and trigger values, that are developed in accordance with the Queensland Water Quality Guidelines;
   - provide details of how the operation will ensure that contaminated water, which has been proposed to be used in the processing plant and dust suppression on haul roads, will not have an impact on groundwater;
   - Provide appropriate modelling, such as, the Model for Effluent Disposal Using Land Irrigation (MEDLI) software, for the proposed method of treating and releasing sewage.

3. Waste rock/ore/tailings characterisation and management:
   - Provide detailed characterisation of the waste rock, waste ore and tailings material, including but not limited to kinetic tests, advanced static tests and multi-element analysis, in accordance with the Global Acid Rock Drainage (GARD) Guide requirements;
   - provide a material balance of NAF, PAF and Uncertain material based on the testing required above;
   - provide a statistical analysis that demonstrates the sampling intensity and regime is sufficient to determine the character of mine waste (rock, ore and tailings) as either PAF or NAF;
   - provide a conceptual site model that describes the release, transport and fate of contaminants from waste disposal facilities, in accordance with the GARD Guide requirements;
   - provide a detailed assessment of the predicted volumes and quality of seepage from the proposed waste disposal facilities;
   - provide detailed designs, by a suitably qualified person, of the proposed waste disposal facilities, supported by a land use assessment in accordance with Table 2, Schedule 5 of the Environmental Protection Regulation 2008;
• provide a waste rock, ore and tailings management plans for the life of the mine based on the information required above; and
• Provide details of the proposed capping and cover systems for the closure of the waste disposal facilities.

4. **Air**:
• Further information is required to determine the potential impacts to air. Specifically, please provide;
  o Information consistent with the requirements detailed in section 3 to 5 of the Department’s guideline *Application requirements for activities with impacts to air ESR/2015/1840*.
  o An emissions inventory for the project, consistent with section 4 of the Department’s guideline *Application requirements for activities with impacts to air ESR/2015/1840*, in conjunction with information about existing sources/air quality to predict cumulative ground-level impacts on sensitive receptors;
  o An assessment that the operation will meet the air quality objectives specified within the *Environmental Protection Policy for Air (EPP Air)* for all identified sensitive receptors.

5. **Mine planning and design**:
• Provide further information relating to the diversion of any watercourse, in accordance with section 98 of the *Water Act 2000*, specifically;
  o Details of the watercourse diversion(s) planned throughout the life of the project;
  o Information required by the Department of Natural Resource and Mines Guideline *Works that interfere with water in a watercourse—watercourse diversions (2014)* for proponents seeking approval to divert a watercourse; and
  o An assessment of the potential impacts on downstream environmental values as a result of the watercourse diversion(s) and any associated management measures to prevent or minimise the potential impacts.

6. **Significant Residual Impacts**:
• Please provide further information in relation to the potential for significant residual impacts to occur to prescribed matters, including;
  o In accordance with the Departments *Significant Residual Impact Guideline (2014)*, conduct an assessment of the likelihood of a significant residual impact occurring and provide information to demonstrate how an appropriate environmental offset will be delivered in accordance with the *Environmental Offsets Act 2014 and Environmental Offsets Regulation 2014*.

7. **Regulated Structures**:
• In accordance with the *Manual for assessing hazard consequence and hydraulic performance structures ESR/2016/1933*, please provide a consequence category assessment of any structure that is anticipated to be a ‘regulated structure’.

8. **Rehabilitation**:
• Provide detailed rehabilitation planning, including; objectives, indicators, completion criteria, methods of rehabilitation, the rehabilitation strategy such as progressive rehabilitation and trials and any relevant reference sites that may be used.

9. **Ground truthing**:
• Departmental mapping has identified a prescribed matter identified as, Category B Endangered Regional Ecosystems (ERE) under the *Environmental Protection Act 1994*. The application states
that this area has been ground-truthed and is not consistent with online mapping. Please contact
the Department of Natural Resources and Mines to amend the mapping.

- Departmental mapping has identified a prescribed regional ecosystem within the proposed
disturbance footprint of the pit. A prescribed regional ecosystem is a Matter of State Environmental
Significance to the extent that the ecosystem is located within a defined distance from the defining
banks of the relevant watercourse. Relevant watercourses are identified on the vegetation
management watercourse and drainage feature map under the *Vegetation Management Act 1999.*
Please contact the Department of Natural Resources and Mines to amend the vegetation
management watercourse and drainage feature map.

- Should the mapping not be accepted, information must be provided to demonstrate how an
appropriate environmental offsets will be delivered in accordance with the *Environmental Offsets
Act 2014* and *Environmental Offsets Regulation 2014."

3. Actions

The abovementioned application will lapse unless you respond by giving the administering authority -

(a) all of the information requested; or
(b) part of the information requested together with a written notice asking the authority to proceed with
the assessment of the application; or
(c) a written notice –
   i. stating that you do not intend to supply any of the information requested; and
   ii. asking the administering authority to proceed with the assessment of the application.

A response to the information requested must be provided by **7 September 2017** (the information response
period). If you wish to extend the information response period, a request to extend the period must be
made at least 10 business days before the last day of the information response period.

The response to this information request or a request to extend the information response period can be
submitted to the administering authority by email to *Kerwin.swanson@ehp.qld.gov.au* and
ESCOirns@ehp.qld.gov.au.

If the information provided in response to this information request is still not adequate for the administering
authority to make a decision, your application may be refused as a result of section 176 of the
*Environmental Protection Act 1994,* where the administering authority must have regard to any response
given for an information request.
4. Review and appeal rights

You may apply to the administering authority for a review of this decision within 10 business days after receiving this notice. Information about your review rights is attached to this notice. This information is guidance only and you may have other legal rights and obligations.

If you require more information, please contact Kerwin Swanson, A/Senior Environmental Officer of the Department, on the telephone (07) 4222 5162.

[Signature]

[Date: 2/3/17]

Dean Sharpe
Department of Environment and Heritage Protection
Delegate of the administering authority
*Environmental Protection Act 1994*

Enquiries:
PO Box 7230
CAIRNS QLD 4870
Phone: (07) 4222 5334
Fax: (07) 4222 5070

Attachments

Information sheet: Internal review and appeals (ESR/2015/1742)