16 May 2016

The Environmental Officer,
Department of Environmental and Heritage Protection
PO Box 731
Toowoomba QLD 4350
Attention: Tania Hardie,

Dear Tania

RE: RESPONSE TO FURTHER INFORMATION NEEDED TO DECIDE AN AMENDMENT APPLICATION FOR AN ENVIRONMENTAL AUTHORITY ON ML55017, Ref.172605; 101/0006800

We refer to the information request dated 29/01/2016 and the teleconference meeting held on Friday 19th of February 2016 to discuss issues raised in the information request. We are providing the following information to clarify issues raised in the information request and formally respond to the request.

Please note that we have addressed the issues raised in order of items from the original information request:

➢ Provide the total projected disturbance area (in hectares) for the mining pit void on ML55017;

Based on the current resource and stockpile area required, the projected total disturbed area within the ML55017 is estimated to be approximately 4.63ha of which 3.13ha is proposed as pit void.

➢ Provide the total projected disturbance areas (in hectares) for all other proposed disturbance on ML55017. For example, access/haul roads, stockpiles, stormwater management structures etc.;

It is estimated that of the total 4.63ha approximately 1.5ha will be used for site support operations including access/haul road and topsoil stockpile area. Some of this area will change as the operation progresses and some area will remain disturbed until the end of site extraction activities. And it is anticipated that the disturbed area within ML55017 at any point in time will be minimal and AMCOL has proposed proactive rehabilitation activities as the operation progress. Therefore, any disturbed area will be minimised by progressive rehabilitated similar to the existing northern pit operations.

The proposed operations activities on ML55017, will be limited to extractive/mining activities and no processing activities. The materials will be transport to the current processing and stockpiling pads in the infrastructure area once they are extracted. The extraction area within ML55017 will be designed as a self-draining excavated pit with gently sloping sides, similar to the north pit. All contaminated stormwater from ML55017 will be captured within the in-pit basin and allowed to settle before being reused for dust suppression, treated for discharge or pumped to other pit storage for rehabilitation watering.
There is current light vehicle access track to the site but a new haul road will be constructed through the old western pit access to the southeast of ML55017 (Refer Site_Plan_3a_V3.2). The development of this route will only involve limited clearing of grass/shrubs within the existing mining lease area.

Amcol understands that sodic soils are highly prone to structural degradation and are familiar with the nature of the soil present at the operation. Best practice erosion and sediment control will be followed during the operation by reducing any unnecessary excavation and clearing during the road construction and pit preparation.

As mentioned above, the pit will be designed to be self-draining, with adequate measures and controls to be implemented to ensure all uncontaminated stormwater from the undisturbed areas are diverted around the extraction area and to the creek by using appropriate diversion bunds.

It is anticipated that the disturbed area will be rehabilitated via re-contouring, topsoiling and seeded with grass species suitable for grazing. The pit area will be back-filled to a safe level for animal egress and expected final land use is for water storage as specified by the landowner.

In order to adequately monitor the quality of stormwater a new upstream monitoring location (WS5) has been established within Juandah Creek at co-ordinates 796,922 E and 7,077,282 N (zone 55 GDA94). This will serve as an upstream monitoring point whilst the current WS1 will be retained and renamed as a downstream monitoring point for new ML55017 operations. Refer Monitoring Location Plan in Stormwater Management Plan (SMP). The monitoring frequency will be every 3 months if flowing and in the event of release/overflow to waterways. (Refer updated Stormwater Management Plan).

Include an assessment of the likely impact specifically of the proposed amendment on the environmental values, including:

- a description of the environmental values likely to be affected by the proposed amendment; and
- details of any emissions or releases likely to be generated by the proposed amendment.

There is minimal impact on the environmental value of the area due to the proposed new operations on ML55017, the location of the operation is within grassland and the low extraction rate will allow rehabilitation works to be completed progressively. The mining lease extends over a watercourse leading to Juandah Creek within the western portion of the mining lease area. However, extraction operations are not expected to extend to this area and an appropriate buffer will be maintained to the watercourse (Refer Site Layout Plan_MLP017_V2.0). Anticipated association environmental risk to the operation are dust, noise, vibration and flooding.

With previous mining experience in this area coupled with the material properties of targeted extractive minerals in the new operation, it is expected to be a similar process to the existing operation. The dust generation from the new site is expected to be minimal, mostly associated with the truck movements, dust related to extraction method will be very minimal. Dust generation during extraction is minimal due to the high moisture content of the Bentonite. Bentonite clay when extracted has a high moisture content and therefore emits little to no significant dust. The extraction involves free digging, by using excavators or scrapers. The overburden is generally a high moisture clay and generates minimal dust emissions during the operation. Dust suppression using stormwater collected on site is used during unfavourable weather conditions. Also due to the significant distance between operations on site and the neighbouring residences, which is over 3km from the proposed operation area on ML55017, it is assumed that sufficient attenuation will occur and is not expected to have any influence on the nearby residents. (Refer Neighbour Plan...
Hence it is considered the impact of dust generated on site will have minimal impact on the neighbouring residency and general environment.

It is considered that similar to the existing operations there would not be any significant impacts from noise and vibration since no drilling and blasting is required. Minor noise and vibration is anticipated from excavator and loader operation, moving trucks, truck loading and dumping as well as screening. Refer EMP for management of these impacts.

Flooding during heavy rain fall is an environmental risk that may impact stormwater quality and contaminant due to the close proximity of Jundah creek and its waterways to the Mining lease area. The site maintains an effective buffer from Jundah Creek and associated watercourses, slope height different is more than 5m to the proposed extraction location and is considered not to adversely affect human health and wellbeing of neighbouring community and likewise impacts biodiversity of its ecosystems.

- a description of the risk and likely magnitude of impacts on the environmental values;

As mentioned above, flooding and erosion are risks associated with the proposed operation, these are not considered to be significant and have been considered in operation planning and addressed in site Environmental Management Plan (EMP). AMCOL understand that excessive clearing and excavation may cause erosion due to the sodic nature of the soil. Therefore, extraction operations have been planned in a way to reduce the impacts on the soil, by staging the extraction phases and only exposing a small area of land at a time. With a proactive rehabilitation program implemented the site risks of erosion is minimised.

Groundwater contamination is another identified issue during the teleconference but the extraction pit is relatively shallow (<10m generally) and only open for a short period. Although there is potential of water percolating into groundwater, since operations began on site there have been no issues with any groundwater contamination around the site location.

- details of the management practices proposed to be implemented to prevent or minimise adverse impacts;

AMCOL understand the cost implication of laxity in environmental responsibility and importance of corporate citizenship including the triple bottom line of doing ethical business. Hence, all anticipated impacts relating to the operation have been addressed in the site management plan and environmental management report. (refer Environmental Management Plan, Stormwater Management Plan and Rehabilitation Management Plan).

- Include a description of the proposed measures for minimising and managing waste generated by any amendments to the relevant activity;

The Gurulmundi Mine site is not on the Environmental Management Register or Contaminated Land Register under the Environmental Protection Act 1994 and the proposed development is considered not to pose any serious impact on the environment. A waste management program has developed as part of the site based management plan document and addressed in the site environmental management plan. Which provides procedures on how to manage rubbish in an environmentally sustainable manner, to ensure stockpiled waste does not contribute to the generation of
contaminated stormwater runoff and adhere to the relevant provisions of the Environmental Protection (Waste) Policy 2000.

The waste collected on site is usually transferred to a licenced waste disposal facility by a licenced waste disposal contractor. The site dispose or recycle all heavy metal and scrap metals in an appropriate manner, store waste (hazardous or non-hazardous) in suitable containers at designated waste locations on site until off-site disposal can be arranged. Any bulk waste stored on site or hazardous wastes (oils, chemicals etc.) will be managed with appropriate bunds to ensure the risk of contamination is reduced if a spill occurs. In addition, all chemical substances used on site shall be used in accordance with the Safety Data Sheets (SDS’s) and relevant regulatory requirements.

By employing all necessary mitigation measures the risk of soil contamination is reduced, however, in the case of a spill appropriate spill kits are available to minimise the spread of contamination. There are different refuse disposal locations on site, the refuse disposal locations are as follows:

- **REFUSE 1: Office**
  - 2 Wheelie Bins (1 x General Waste; 1 x Recyclables)
- **REFUSE 2: Processing Plant**
  - 2 Wheelie Bins (1 x General Waste; 1 x Recyclables)
  - 2 Skips (1x General Waste, 1 x Recyclables)
  - 1 Waste Oil Disposal Facility

All employees, sub-contractors and visitors are advised of the location and appropriate use of these refuse disposal facilities upon induction to the site.

- Include a rehabilitation strategy for the proposed disturbance that meets the requirements of the EHP Guideline Rehabilitation requirements for mining resource activities (EM1122);

The site proposed to adopt similar rehabilitation process for their operations, therefore the rehabilitation process on the ML 55017 will be similar to the other mining operation. The disturbed area will be rehabilitated as soon as operation in each section is completed. Some of the area will be contoured back and revegetated with native vegetation species whilst some area will be developed as water storage dam for land owner use. (Refer site rehabilitation management plan).

- Include an erosion and sediment control strategy for the proposed mining activities on ML55017 including details of erosion and sediment control measures (including any sediment dams) and measures to separate clean storm water from undisturbed areas;

The site has a long standing stormwater management procedure that follows in its operation. And we incorporate similar practise to the new ML55017. The proposed extraction area is designed to self-drained, a self-sustained stormwater management system. The pit surroundings will be bunded to prevent uncontaminated stormwater from entering the pit and it is proposed to use various diversion bunds to divert uncontaminated stormwater away from disturbed area. As part of the sediment and erosion management plan on site, the disturbed area at any one time will be minimised by rehabilitating completed extraction activities as soon as practically possible. (Refer Site stormwater management plan).
A matter of state environment significance (MSES) has also been identified on the tenement (Regulated Vegetation - intersecting a watercourse). Assessment frameworks which have an ‘avoid, mitigate, offset’ obligation, require in the first instance that impacts on prescribed environmental matters be avoided. If avoidance cannot be achieved, it must be demonstrated that impacts have been carefully managed and minimised (mitigated). Please provide information on how the activities will not cause a significant residual impact to the MSES and what activities will be implemented to avoid or mitigate impacts.

The site vegetation mapping does not show any of concern or endangered vegetation within the new ML55017 area or proposed haulage route on site (Refer Site vegetation plan). Although the mining lease boundary extended over a water channel to Juandah Creek to the west of the mining lease area however, extraction operation is not expected to extend to this area. As a preventative measure the site has proposed earth bund along the watercourse to prevent any interfering of operation and for flooding prevention. Also there is a significant height different in this area to prevent any stormwater to get in to the operation area.

Besides, proactive water sampling is proposed to constantly measure the stormwater quality and management. Therefore, in order to best monitor the stormwater quality/contaminants a new upstream (WS5) monitoring location has been established on Juandah Creek at 796,922 E and 7,077,282 N (zone 55 GDA94), this will save as upstream monitoring point whilst the current WS1 will be retained and re-named as downstream monitoring point for new ML55017 operations. Refer Monitoring Location Plan in Stormwater Management Plan (SMP). The monitoring frequency will be every 3 months if flowing and in the event of release/ overflow to waters ways. (Refer updated Stormwater Management Plan).

The operation is confident that the existing contaminant release limit values are appropriate for the proposed operations within ML55017.

Once again thanks for your time and I am readily available to discuss further in detail on any area of the information that needs further clarity. Please do not hesitate to contact me or my office for any clarification if required.

Yours Sincerely

Adebayo Bayooke

Principal Mining Engineer.