



Department of Primary Industries

OUT13/23681

21 AUG 2013

Ms Elle Donnelley
Mining and Industry Projects
NSW Department of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Elle.Donnelley@planning.nsw.gov.au

Dear Ms Donnelley,

Northparkes Extension Project (MP 11_0060) Response to exhibition of Environmental Assessment

I refer to your email dated 8 July 2013 requesting advice from the Department of Primary Industries (DPI) in respect to the above matter.

Comment by Crown Lands

Crown Lands advise:

- (i) use of any Crown road area will require that road to be closed under the *Roads Act 1993* and either purchased or some other access/occupation arrangement authorised. The proponent should make early contact with Crown Lands in relation to the occupation of any Crown road.
- (ii) any activity that affects Travelling Stock Reserves or associated tenures should be referred to both the local Livestock Health & Pest Authority and Crown Lands prior to commencement of the activity.

For further information please contact Rebecca Johnson, Co-ordinator Client Services, (Newcastle office) on 4920 5040 or: rebecca.johnson@lands.nsw.gov.au.

Comment by NSW Office of Water

NSW Office of Water advise the key points listed below. Detailed comments are in Attachment A, recommended conditions of approval should the application be approved are in Attachment B, and groundwater modelling report comments are in Attachment C.

- (i) The project proposes no increase in water demand hence no changes are proposed to the current water supply system. However, the Environmental Assessment (EA) has indicated an increase in groundwater inflows which will require the purchase of additional licensed entitlement within the Lachlan Fold Belt Water Source. Detail on water demands is also requested.

- (ii) The EA has not directly addressed the minimal impact considerations of the NSW Aquifer Interference Policy or confirmed the classification of the groundwater model in accordance with the *Australian Groundwater Modelling Guidelines (2012)*. It is requested clarification be provided in regards to these two issues.
- (iii) It is recommended further assessment be completed on the functioning of the voids to determine whether the final voids will act as groundwater sinks or sources and the potential impacts to water quality and water levels.
- (iv) A conceptual plan is requested of the proposed road crossing of Goonumbla Creek with details of the road formations in relation to the existing ground level and the flood extents. Potential redistribution of flood flows and mitigating measures to ensure channel and floodplain stability are also requested.
- (v) Licensing under the *Water Act 1912* will be required for additional monitoring bores.
- (vi) The Office of Water supports the proposed review of the Water Management Plan which is to include updates to both the groundwater management plan and the surface water management plan

For further information please contact Tim Baker, Senior Water Regulation Officer (Dubbo office) on 6841 7403 or at: tim.baker@water.nsw.gov.au.

Comment by Fisheries NSW

Fisheries NSW advise no issues.

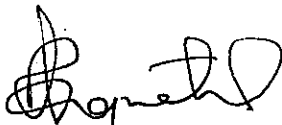
For further information please contact David Ward, Fisheries Conservation Manager (Tamworth office) on 6763 1255 or at: david.ward@industry.nsw.gov.au.

Comment by Office of Agricultural Sustainability and Food Security

In accordance with arrangements for mining proposal that affect agricultural land, the Office of Agricultural Sustainability and Food Security will respond separately to your Department.

For further information contact Mary Kovac, Resource Management Officer (Dubbo office) on 6881 1250 or at mary.kovac@industry.nsw.gov.au.

Yours sincerely



Phil Anquetil

Executive Director Business Services

Attachment A

Northparkes Extension Project (MP 11_0060) Response to exhibition of EIS Comment by NSW Office of Water

1.General

- (i) Section 5.8.1 of the main EA provides detail on the proposed water sources, however a breakdown of water demands is not included. A detailed breakdown of water demands and their sources is requested including annual volumes for activities such as ore processing, construction, dust suppression, amenities and potable supply.

2.Groundwater Licensing

- (i) The estimated groundwater inflows detailed in Table C8 of Appendix C to the Groundwater Assessment have defined the water take for all existing and proposed operations at North Parkes Mine (NPM) until 2032 in the Lachlan Fold Belt Groundwater Source. This indicates the current water take is 292ML/yr (0.8ML/d) and this is to increase to a maximum groundwater take of 766ML (2.1ML/d) in 2026. It needs to be recognised that the maximum peak inflow of 5ML/d in 2026 was ignored for the analysis. NPM currently hold an entitlement of 232 unit shares in the Lachlan Fold Belt water source. Additional entitlement therefore needs to be purchased to account for existing annual water take in addition to the predicted maximum water take. A breakdown of groundwater inflows based on each mining area is requested to further define the water take requirements.
- (ii) The groundwater modelling has not assessed the groundwater take after mine closure. During this period it is recognised groundwater will enter the voids as they fill and water take will continue when an equilibrium is reached due to evaporation. The NSW Office of Water requests predictions of water take during the mine closure period and cross-sections to represent the water table levels in relation to the mining operations.
- (iii) Licensing under the *Water Act 1912* will be required for additional monitoring bores.

3.Groundwater Impacts

- (i) The EA has not directly addressed the Aquifer Interference Policy minimal impact considerations. It is requested the proponent clarify that there will not be a drawdown in the water table or pressure head of greater than a cumulative 2m at any water supply work. Based on the maximum predicted groundwater drawdown extent the EA has indicated no private groundwater users will be affected. This conclusion requires further justification as requested in the next section on groundwater modelling.
- (ii) The EA has determined the impacts to groundwater due to the project will not have a measurable impact on the surface water systems. The closest high priority Groundwater Dependent Ecosystem (GDE) is located more than 50km from the site which is outside of the modelled drawdown extent.
- (iii) It is recognised there is uncertainty as to the management of the final voids, with NPM highlighting the potential to use the voids to dispose of tailings into the future. However as the use of the voids for tailings disposal has not been confirmed or assessed within the EA, the NSW Office of Water has assumed this option is not part of the current extension project. If this is not the case, further assessment will be required on potential groundwater impacts.
- (iv) Section 5.14.2 of the main EA indicates the subsidence monitoring is to use groundwater modelling to determine whether the voids will act as groundwater sinks or sources and the potential impacts. As these are potential project impacts it is recommended these be assessed prior to determination and to include confirmation of predicted final groundwater levels and water quality.

- (v) Figure 34 referred to in Section 6.3.4 of the Groundwater Assessment (Appendix 10) could not be identified. As this figure depicts the locations of existing registered bores and the one-meter drawdown contour, it is requested this be provided for review.
- (vi) Section 6.4.3 of the Groundwater Assessment indicates the potential for oxidation to occur following dewatering with resultant increased levels of TDS and metals in the groundwater system. The changes to water quality however have not been quantified hence it is requested these impacts be further assessed. Further to this it is requested a description be provided of the baseline water quality at the site including a graphical presentation of historical analyte concentration change with time (including a minimum of TDS, AS, Pb and Zn). It is requested the graphs include sites in the vicinity of existing open pits/underground activities and existing/proposed tailings facilities. This information will assist in its assessment of potential groundwater quality impacts.

4. Groundwater Modelling

- (i) The groundwater modelling section has not provided a confidence classification according to the *Australian Groundwater Modelling Guidelines (2012)* (AGMG) and does not specify if the site model has been independently reviewed by a hydrogeologist. The suitability of the model for the intended purpose is therefore uncertain. The NSW Office of Water therefore requests the proponent provide an independent review of the model and justify the confidence classification and its suitability for the proposed development according to AGMG.
- (ii) With the exception of monitoring bores W12 to W16, Figure C8 in Appendix C of Appendix 10 shows an overall trend where the computed drawdowns underestimate the measured drawdowns. This indicates the predictive runs presented in the EA may have underestimated impacts to groundwater pressures. It is therefore not possible to accurately determine the maximum impacts to water supply works.
- (iii) The model has not incorporated baseline data from observation bores MB19/20 and P149. Clarification is requested for the basis of not incorporating data from these bores and/or inclusion in the model for further analysis.
- (iv) To assist in improving the presentation of information in the groundwater modelling report in Appendix 10 it is recommended detailed comments in Attachment C be addressed.

5. Surface Water Impacts

- (i) The project will result in a reduction in catchment area by 203ha which represents a 0.2% reduction in the Bogan River catchment and a 0.8% reduction in the Cookapie Creek catchment. This catchment area reduction represents a reduction in average yearly runoff to downstream water users and the environment of 123ML. There are no licensed water users on Cookapie Creek downstream of the mine site, hence impacts would be to water users with riparian rights and the environment. The impacts of this stream flow reduction have not been clearly assessed within the EA.
- (ii) The EA has indicated all proposed mining activities and associated infrastructure will be located outside of the 100 year ARI flood extent, or in the case of the new road crossing will be able to convey the 100 year ARI flows. A conceptual plan is requested of the proposed road crossing of Goonumbla Creek with details of the road formations in relation to the existing ground level and the flood extents. Potential redistribution of flood flows and mitigating measures to ensure channel and floodplain stability are also requested. Based on this information the NSW Office of Water will be able to determine the applicability of a Part 8 approval under the *Water Act 1912* and the potential for consistency with the *Guidelines for Controlled Activities on Waterfront Land (July 2012)*.

6. Monitoring and Management

- (i) The NSW Office of Water supports the proposed update to the NPM Water Management Plan to reflect the assessment outcomes of the current extension project.
- (ii) The NSW Office of Water supports the proposed monitoring of groundwater and surface water to enable review against licensed limits. The proposed reviews to groundwater trigger levels for water quality and water level is also supported.

- (iii) It is recommended the additional monitoring bores be constructed prior to commencement of the extension development.
- (iv) It is recommended data from the monitoring bores be used periodically for model calibration, predictions of mine inflow, and review of groundwater drawdown impacts. Comprehensive metering of all points of water take combined with water level monitoring is critical for reporting against water licence requirements, and supporting periodic reviews for model calibration, predictions of mine inflow, and review of groundwater drawdown impacts. This will aid in ensuring adequate water entitlement is held prior to the water take occurring and impacts are acceptable.

End Attachment A

Attachment B

Northparkes Extension Project (MP 11_0060) Response to exhibition of EIS Recommended Conditions of Approval - NSW Office of Water

- (i) The proponent is required to obtain the necessary water licenses for the project under the *Water Act 1912* or *Water Management Act 2000* prior to commencement of activities.
- (ii) The Proponent shall review the Water Management Plan for the project. This Plan must be developed in consultation with the NSW Office of Water and include:
 - details of water use, metering and water management on site,
 - details of water licence requirements,
 - Surface Water Management Plan, and
 - Groundwater Management Plan.
- (iii) The Surface Water Management Plan must include:
 - a program to monitor:
 - surface water flows and quality,
 - surface water storage and use, and
 - sediment basin operation,
 - sediment and erosion control plans,
 - surface water impact assessment criteria, including trigger levels for investigating any potentially adverse surface water impacts, and
 - a protocol for the investigation and mitigation of identified exceedences of the surface water impact assessment criteria.
- (iv) The Groundwater Management Plan must include:
 - baseline data on groundwater levels and quality,
 - a program to monitor groundwater levels and quality,
 - groundwater impact assessment criteria, including trigger levels for investigating any potentially adverse groundwater impacts,
 - a protocol for the investigation and mitigation of identified exceedences of the groundwater impact assessment criteria.
 - a protocol for periodic review of groundwater model calibration and verification of groundwater take predictions and groundwater impacts.

End Attachment B

Attachment C

Northparkes Extension Project (MP 11_0060) Response to exhibition of EIS Groundwater Modelling Report Comments - NSW Office of Water

Appendix 10 of the Environmental Assessment (EA)

- (i) Section 4.7: Table 12 – bore water entry design, bore licence numbers and bore collar (measuring point) elevations are not included.
- (ii) Section 4.7: Figure 9 – requires a map 'insert' panel so site bores may be differentiated in vicinity of "E22 and E27" mining areas.
- (iii) Section 4.7: Figures 12 and 13 require an additional hydrograph each to separate hydroplots for the purpose of enabling differentiation of individual bores.
- (iv) Section 4.7: Figures 10, 11, 12 and 13 require adjustment to horizontal 'date' scales to enable hydrograph interpretation. In addition, the astrix marks on Figures 10, 11 and 13 require explanation.
- (v) Section 4.8.3: does not clearly state what water quality analytes have been tested for, from which bores in past at the site. The EA requires revision including summary table presentation of analytes tested from which locations.
- (vi) Section 4.8.3: In order to make assessment of potential impacts, the EA requires addition of water quality data collected to date presented via graph form to show individual analytes including at a minimum Total Dissolved Solids (TDS), Arsenic (As), Lead (Pb), and Zinc (Zn) concentration change with time in each monitoring bore / sample point.
- (vii) Section 4.8.3: requires pre-mining and post-mining spatial distribution maps of groundwater quality including at a minimum TDS, As, Pb, and Zn concentrations.
- (viii) Section 4.8.4: Table 17 – requires addition of both Pb and As concentration comparison to guidelines.
- (ix) Section 7.3.2: Locations of proposed additional monitoring bores around the proposed waste facilities (Tailing Storage Facility [TSF] 3, new waste rock stockpiles) require detailing.

Appendix B within Appendix 10 of the EA

- (i) Section 5.0: Bore licences 80BL241019, 80BL241042, 80BL241023, and 80BL241020 are incorrectly described as dewatering purpose. According to Office of Water records these bores are currently licensed for monitoring purposes. Also, it is not clearly defined for what licences 70SA009535 and 70AL600028 are to be utilized.

Appendix C within Appendix 10 of the EA

- (i) Section 2.2.1: Figure C8 – With exception of monitoring bores W12 through W16 the overall trend is that computed drawdown's underestimate measured drawdowns. This implies any predictive runs from this model may underestimate impacts to groundwater pressures.
- (ii) Section 2.2.1: Figure C8 – requires addition of regularized date intervals to each plot, for example Jan 1995, Jan 2000, Jan 2005, etc.

- (iii) Section 2.2.1: Figure C8 – requires addition of events such as when mining starts to each plot.
- (iv) Section 2.2.1: Figure C8 – Vertical scale requires division into reasonable sub-increments, for example 10m or 20m.
- (v) Section 2.2.1: Figure C8 – Asterix assigned to select bores requires explanation.
- (vi) Section 2.2.1: Figure C8 – Overestimation at bore W12 in excess of 80 meters of drawdown indicates calibration in immediate vicinity of E22 resource is poorly calibrated or vertical model profiling may require adjustment.
- (vii) Section 2.2.1: Explanation or deletion of comment that groundwater pressure rise is evident from computed measurements in bores MB1, MB2, MB4, MB5, MB13 and MB14 is required. Figure C8 does not indicate level rise in these bores in its current format. In addition, monitoring bore MB10 is mentioned in this section but not included in Figure C8.
- (viii) Section 2.2.1: Table C7 – Model layers require depth intervals (in meters).
- (ix) Section 2.2.1: If any parameters presented in Table C7 have been verified with aquifer testing analysis explanation is required.
- (x) Inadequate existing monitoring information utilization in the MODFLOW model both east and west of the proposed extension to the E26 resource. As indicated from Figure C7 monitoring bores MB19/20 to the east of E26 and P149 west of E26 were not utilized as 'observation' bores in the model.

End Attachment C