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Subject: Curraghinalt_DAERA Groundwater_Clarification
Date: 06 April 2020 09:05:12
Attachments: [REDACTED]

Morning [REDACTED]

Please see attached a letter which contains clarifications in relation to questions raised.

Any queries please do not hesitate to come back to us.

Kind regards, [REDACTED]

[REDACTED]
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Our co-owners are contactable in the usual ways and we suggest using mobile numbers in the first instance. We are doing all we can to maintain client service during this challenging time.

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Our Ref: U7511 DAERA Groundwater_ES Addendum_Clarifications_Letter.docx

06 April 2020


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RE: UK7511 – Clarifications to the Environmental Statement Addendum – DAERA Land and Groundwater Team

This letter contains clarifications in relation to questions raised by the Land and Groundwater Team within DAERA. The questions were raised during the course of a meeting held on 2 December 2019 in Belfast following the submission of the Curraghinalt Environmental Statement (ES) Addendum in July 2019.

The Reference Number in the table below assigns a unique reference number to each response to assist with identification of specific queries and cross reference replies where appropriate.



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1.1 DAERA Land and Groundwater Team Clarification Questions

Ref No.	Consultee comments	Reply
1	MRV's (minimum reporting values) in relation to hazardous substances in groundwater (section 3.4): The UK-TAG refers to both MRVs and the 50% of safe drinking water method. The NIEA position is to use the latter. This is not formally published anywhere at present.	<p>This is noted. The groundwater design target criteria currently used for the project for hazardous substances are based on the MRV criteria and background levels are in line with the discernibility definition. Therefore, except for arsenic, this is a more stringent approach than the 50% of safe drinking water method.</p> <p>The MRV criteria will be maintained for design targets and monitoring trigger levels to ensure a precautionary approach.</p> <p>Regarding arsenic, the natural baseline groundwater concentration of arsenic in the area exceeds both MRV and 50% safe drinking water level. Therefore, by preventing any discernible input of arsenic, the natural baseline quality will be preserved.</p>
2	Assessment limits: requested clarification on how these limits are calculated vis some worked examples; for example, in respect of private groundwater abstractions	<p>For groundwater quality monitoring it is proposed that the assessment limit is defined as three consecutive exceedances of the 95th percentile concentration in groundwater + 20%.</p> <p>To give an example, where the 95th percentile concentration for a substance based on historical monitoring is 10ug/l, the assessment limit would be 12ug/l. Similarly, the assessment limit for water levels at a private abstraction point used for monitoring against assessment levels will be the 5th percentile water level minus 20%.</p>
3	Private groundwater supplies: clarify when a baseline assessment will take place for water quality and water levels prior to start of construction. This should accommodate seasonal variation including wet and dry periods.	<p>Monitoring of private groundwater abstractions will be offered to private land owners once planning permission is granted. Access permitting, samples and well depths will be tested at least quarterly during the two year construction period.</p> <p>This will allow adequate sampling during the construction phase to determine a baseline characterisation prior to the commencement of the operational phase.</p> <p>The groundwater monitoring programme is set out in Section 4.5 of the Outline CEMP (ES Addendum 2019 - Appendix B2) and Section 5.2 and 5.3 of the Draft Surface Water and Groundwater Monitoring and Action Plan (ES Addendum - Appendix D2). The reader is also referred to ES Addendum Section 5.3, table reference number 5.5.</p>
4	Assessment criteria: Recommend/suggest options for when a scenario has an immediate effect e.g a private water supply running dry	<p>In the event of a private groundwater abstraction running dry a water tankering arrangement will be put in place to temporarily provide water to the affected user.</p> <p>For further information on longer-term actions, please refer to ES Addendum – Appendix D 2 Section 5.2.</p>
5	The groundwater baseline includes free CN and total CN. This is not included in the proposed monitoring suite in the SGEMAP. Give an explanation why. Also confirm when these changes took place/will take place.	<p>The ES Addendum submitted in July 2019 confirmed the removal of cyanide from the process. Monitoring parameter suites from this date exclude cyanide species including Free Cyanide and Total Cyanide because these are no longer relevant to the project.</p>

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6	<p>Require statement that the Surface Water Impact Assessment complies with requirements of Drinking Water Protected Areas.</p>	<p>The Surface Water Impact Assessment complies with the requirements of Drinking Water Protected Areas, with no impact on water quality or stream flows that would affect such areas.</p> <p>Drinking Water Protected Areas within the study area are governed by the Water Environment (WFD) Regulations (Northern Ireland) 2017: http://www.legislation.gov.uk/nisr/2017/81/pdfs/nisr_20170081_en.pdf</p> <p>The Environmental Statement (2017); Volume 3, Appendix C3, Annex B outlines the approach used to calculate the discharge criteria for the mine site. The methodology used required discharges from the mine site to (i) be consistent with Drinking Water Standards, (ii) be consistent with average baseline concentrations for any parameters where baseline exceeded Drinking Water Standards.</p> <p>It is also noted that mine water will be treated through a Reverse Osmosis (RO) process, which is expected to treat water to levels well below the required discharge criteria. Concentrations associated with the RO treatment are provided in the Environmental Statement; Volume 3, Appendix C3, Annex C.</p> <p>The provision of a RO treatment plant and control of discharges from the mine site through a discharge permit will be protective of the quality of surface waters downstream of the mine site. This was outlined in detail in the Environmental Statement.</p> <p>The overall water balance associated with the mine site is positive for average and low flow conditions, i.e., flows downstream of the mine site will be higher than under baseflow conditions due to pumping of mine water from the underground workings and higher runoff rates from disturbed ground in the site. Therefore, there will be no reduction in flows to watercourses associated with the mine during operations.</p> <p>During closure there will be a slight reduction in baseflows as the groundwater table in the underground mine workings recovers after the end of operations. However, the effects are negligible and have been described in detail in the surface water impact assessment; Environmental Statement – Volume 3, Appendix C3. These changes will not impact the volume of water available in the Drinking Water Protected Areas.</p> <p>A comprehensive surface water flow and quality monitoring program is proposed in the ES Addendum Appendix B3 MWMP Appendix K Surface and Groundwater Monitoring Plan. This will allow comparison between observed flow and quality and predictions (made in ES) within the watercourses downstream of the mine site. This will comply with the monitoring requirements for Drinking Water Protected Areas.</p>
7	<ol style="list-style-type: none"> 1. Clarification of flow pathways for treated sewage – does it pass into the water treatment ponds 2. Provision of table outlining catchment areas and flows for discharge locations. 3. Comment on whether discharges from any peat storage areas would require a discharge consent. 4. Comment on whether under drain would 	<ol style="list-style-type: none"> 1. Confirmed - see Table 5.2, reference number 2.5.18 in the ES Addendum. Treated sewage discharges into a carrier drain which connects into the road (Haul Road) drainage system via a manhole/inspection chamber. The haul road drainage system outfalls to the Upper East Pond. Therefore all water discharged from the proposed infrastructure site will be from a single point. For details of the STP discharge location please refer to drawing number: 2016021-P-CIV-307 Proposed Storm Drainage Layout Sheet 6 of 8. 2. This table is included in the ES Addendum (2019), Section 5.15 3. The peat storage area within the DSF will be developed progressively, as required, during Construction Phase 1 (months 1 to 6) Placement of peat in the temporary spoil storage areas that are proposed in the footprint of Cell 2/3 of the DSF will occur only after the establishment of the initial and permanent

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	<p>require a discharge consent.</p> <p>5. Is there a wheel wash proposed for the operational mine site?</p>	<p>site drainage (including the western drainage ditch and pond) and commissioning of the RO water treatment plant (see Figures 3:2 in the CEMP) and drainage will be captured at source and diverted to the nearby western pond. Therefore water discharged from the peat storage areas will be captured and treated along with other contact water and covered under the single site discharge point.</p> <p>Suitable acrotelmic peat will be placed in the permanent peat restoration area. This area will also be developed during Phase 1 (months 1 to 6) of the construction programme, and perimeter drainage associated with perimeter bunding will be established around this footprint (see Appendix C of the Peat Management Plan). This area will be developed after the establishment of the northern diversion berm and will be managed with siltbusters and an interceptor as described in the draft CEMP and such that it is suitable for bypassing the site without further treatment.</p> <p>4. This is not proposed as a permitted discharge point as the underdrains are simply channeling non-contact water from under the DSF to the Pollanroe Burn.</p> <p>5. In addition to the wheel wash described in the outline construction environmental management plan, it is proposed to have a wheel wash on the access ramp to the DSF facility (see drawing 2016021-P-CIV-107 Proposed Haul Road Plan & Profile (CH0-CH430) Rev A). All water from the DSF access ramp and mine haul roads will be treated as contact water and will flow to the management ponds.</p>

For and on behalf of SRK Consulting (UK) Limited

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