Noeleen Keavey

From: Elaine O'Reilly [redacted]
Sent: 28 June 2018 14:53
To: Noeleen Keavey
Subject: P1078-01 Shanoon Resources Ltd., Garrylaun, Galmoy, Co.Kilkenny - New IPC Application - Consultation
Attachments: Scanned from a Xerox Multifunction Printer.pdf; 18.229 FI requested.pdf

Please find attached (2 documents) Kilkenny Councils response to your email dated 06 June 2018 regarding the above.

Regards,

Elaine
On behalf of Planning

[redacted]

Comhairle Chontae Chill Chainnigh | **Kilkenny County Council**

Halla an Chontae, Sráid Eoin, Cill Chainnigh, R95 A39T. | County Hall, John Street, Kilkenny, R95 A39T.

Fónamh don Phobal - Caomhnú don Oidhreacht | Serving People – Preserving Heritage

Our Ref.: IR494

28th June 2018

Noleen Keavney,
Environmental Licensing Programme
Office of Environmental Sustainability

Sent Via e mail

Re: Notification under Section 871(D) (a) of the EPA Acts, as amended
Applicant: Shanoon Resources Ltd.
Location of Facility: Garrylaun, Galmoy Co. Kilkenny

A Chara,

In response to your email dated 06.06.2018 regarding the above Kilkenny County Council wish to comment as follows:

A Planning Application was received from Shanoon Resources Ltd. ref. P.18/229 for the following development:
The development will consist of the recommencement of underground mining at the former Galmoy Zinc and Lead Mine, comprising access portal, declines, ventilation shafts and extension to underground workings. The proposed development will also involve the refurbishment and retention of a number of surface structures, including water well pump stations, dewatering wells; buildings including plant electrical building, pump houses, workshops, offices, laboratories, toilets and washing facilities, mine change house, security house, storage and warehouse areas, including structures for reagents, cement, engineered fill, sand, ore, cores, fuel, emulsion, dust collectors and backfill preparation; including water and other pipelines, water treatment plant, water discharge diffuser, sewage holding tanks and sewage treatment facilities, storm water storage pond and water treatment pond, and weighing facilities, electricity lines, electrical cables and wiring, transformers, sub-stations and switch-rooms; fire water facilities; temporary stockpiles for rock, overburden and topsoil; change of use of ore storage structure (tepee); other works including permanent entrance, access ways, internal roads, car park, truck park and yards, landscaping berms, planting, security fencing, boundary walls, electric lighting and entrance signage. Permission is also being sought for the construction of a wheelwash and water conditioning pond. An IPC licence permit would be required in relation to the proposed development. An Environmental Impact Statement (now referred to an Environmental Impact Assessment Report (EIAR)), and an Appropriate Assessment (AA) screening will be submitted to the Planning Authority

with the application at Garrylaun Castletown Rathreagh Rathpatrick, Whiteswall Moneynamuck (Stopford) Rathbane and Waterland, close to village of Galmoy, Co Kilkenny (also incl Kyle Co Laois).

Kilkenny County Council requested further information on 1st June 2018; the further information items are as per the attached document.

Annette Fitzpatrick,
Administrative Officer,
Planning Section

Reference in Planning Register P.18/229.

Preamble to further information request.

Significant Quantity of Information Required

The proposed development lies directly below a regional public water supply scheme that has been developed by Irish Water – who have objected to the scheme because it constitutes a fundamental threat to the security of the quantity, quality and reliability of their scheme.

The nature of mining projects is that there is continuing risks of pollution and changes of water flows together with a very high degree of uncertainty about the effectiveness of mitigation measures. For these reasons, the co-existence of a mine and a water supply requires the existence of an alternative equivalent public water scheme to be available – prior to the commencement of mining operations.

No such alternative public water scheme exists. Putting such a scheme in place – if a suitable equivalent source can be found – would be costly and time-consuming. The applicant has not addressed this issue within the application. This matter is such a fundamental consideration and requires such a magnitude of design, assessment and regulation – not to mention design, procurement of properties, wayleaves and permissions that it cannot be addressed by either further information, nor by condition.

Accordingly the scheme, as currently presented, cannot be approved because of the threat that is posed to a public water supply scheme and public health.

Furthermore, the application itself is deficient because it lacks almost all of the operational plans necessary to provide the basis for enforceable conditions necessary to offer protections against major issues such as water pollution, subsidence, emergencies, aftercare and restoration. None of these are capable of being addressed by conditions.

A Schedule of Further Information required is attached. It illustrates the very large volume and very considerable investment of investigation, assessment, design and co-ordination that would be required to facilitate any form of determination – if such studies can, in fact, conclusively demonstrate the feasibility of safely and sustainably implementing the project.

The applicant is advised that the provisions of information required to address almost all of these issues will require such additional investigation, assessment, design and permitting will require significant periods of time.

Burden of proof upon applicant

The applicant makes a number of references to the success of all aspects of the development and decommissioning of the old Galmoy mine and goes on to offer the assurance that the re-use of the previous methods and approaches will guarantee the operational and environmental success of the new development.

However, the application, as currently proposed, needs to provide further, very specific, detail about such matters that are integral to the determination of the application and, as such, must be included with the application to be available for prior public scrutiny. These matters include; -

1. Construction Management Plan
2. Groundwater monitoring plan and associated groundwater monitoring committee
3. Closure, Restoration & Aftercare Management Plan
4. Emergency Plan
5. Waste Management Plan
6. Financial Sureties
7. Compliance Plan

These matters arise, in addition to the significant matter of the likely effect on the water supply scheme and the lack of an alternative in the event of an effect on supply.
Most of these matters are complex, because they will require interagency cooperation and permitting.
The burden of proof lies entirely with the applicant.

Consent cannot be granted without enforceable undertakings by the applicant

For the avoidance of doubt, having regard to the significance, seriousness and potentially irreversible adverse effects of a mining operation that lacks clear and fully enforceable commitments about development, operation, mitigation and risk management consent cannot be granted without enforceable undertakings by the applicant.

P.18/229

With reference to your application and in accordance with Part 4, Article 33 of the Planning & Development Regulations, 2001-2018, you are requested to submit ten copies and ten electronic copies of the following information:

Lot A- Project Description

Item 1

Public Water Supply

The applicant shall describe how the existing Rathdowney Public Water Supply Scheme can be immediately replaced in the event of loss of supply – by virtue of the quality, quantity, cost or reliability – due to the direct or induced effects of the development, operation or decommissioning of the mine.

Construction Management Plan

The applicant shall prepare a Construction Management Plan to describe, in detail all temporary works.

The Construction Management Plan shall identify and assess issues that will include, but not be limited to;-

- Pre-operational works that are not likely to be encompassed by the operational conditions of the IPC.
- Temporary vehicle and materials movement and storage areas.
- Temporary vehicular access to all surface ventilation, access/egress and drainage/discharge facilities.
- Waste storage and handling procedures at all areas – including access/egress and dewatering sump and discharge areas.
- Water diversions and local surface water management.
- Fencing and boundary treatment.
- Initial dewatering arrangements

Groundwater Monitoring Plan and associated Groundwater Monitoring Committee

The applicant shall provide a proposal for a structure to regularly report on the results of all aspects of groundwater monitoring – during the mine re-opening phase, during operations as well as during and after closure. The structure shall include provision for; the convening and regular, timely reporting to a representative committee; details of the matters that shall be reported on; details of the mitigation measures that shall be available to the committee in the event of unanticipated or unplanned monitoring results.

Closure, Restoration & Aftercare Management Plan

The applicant is required to provide an outline Closure, Restoration and Aftercare Management Plan to provide a basis for determining the feasibility of implementation as well as the estimating the adequacy of financial conditions as well as to facilitate the preparation of adequate and enforceable conditions. Note: it will not be sufficient to state that;- "The existing Closure, Restoration and Aftercare Management Plan [CRAMP] for Galmoy Mine will be adapted, updated and agreed with the EPA for the re-commencement of mining at the Site."

Pillar Management System and Underground Failure Prevention
The applicant is required to submit a Pillar Management System and Underground Failure Prevention Plan

Backfill
The applicant is required to identify and quantify the source of all backfill and to confirm that it is available from a permitted and licensed source. If more than one type is proposed, then map the locations where different types will be used. The applicant is further required to clarify whether and how the traffic impact assessment accommodates the transportation of backfill and its impacts.

Dust control
The applicant is required to describe on-site dust management systems – particularly that arising from vehicular movements between the mine and the Teepee.

Life of Mine
The applicant is required to clarify the likely duration of the mining operations. In section 1.2 it states that based on the current known R&R that the mining operations will be carried out over 5 to 6 years. In section 2.4 the LOM is estimated at 10 to 12 years based on a production rate of 200,000 to 250,000t/a.

Blasting
The applicant is required to describe the timing [hour of day and day of week] when blasting will occur. In the EIAR planned blasting times are given as 07:30, 15:30 and 23:30. This contradicts page NTS 20 which states "that blasting will take place twice daily, typically towards the end of each shift". Can applicant clarify the blasting times and if blasting will take place on Saturday mornings?

Mine Ventilation
The applicant is required to confirm if all 6 ventilation fans will be equipped with vent fans and that ventilation air will be drawn down the main access decline by means of ventilation fans located at the base of each ventilation shaft.

Vent Raise Reconstruction
The applicant is required to describe the methods to be used to remove the concrete capping over the six vent raises and remove the fill material within the vent shafts.

Monitoring
The applicant is required to describe the location and monitoring/reporting regimes for dust [on-site and off-site], noise and vibration [especially over the main mining areas of the K2 and Garrylaun in close proximity to sensitive residences in the vicinity of the K2 Orebody and on the Cell 3 of the K Orebody].

Waste Management Plan
The applicant shall provide a detailed Waste Management Plan [WMP] to address the identification, assessment, handling, storage and disposal of all wastes arising from the construction, operation and closure of the proposed development. The WMP shall be prepared in accordance with [standards and further details to be inserted].

Financial Sureties
The applicant shall describe the measures proposed to provide sufficient financial security to fully address any long-term environmental liabilities arising from accidental, controlled uncontrolled cessation of mining as well as for the full implementation of the Closure, Restoration & Aftercare Management Plan.

Compliance Plan
The applicant is required to submit a plan to address all outstanding planning compliance issues on the site – prior to the commencement of development.

Tepee capacity
The applicant shall describe storage capacity of the tepee once the crusher and loading facility have been incorporated.

Demolition Waste
The applicant is required to prepare a detailed plan describing the treatment of all demolition wastes arising from the removal of materials from the mine portal, decline and vents will be identified, assessed, handled, stored, transported and disposed. This is to include a description of all off-site wastes and their fates. The description will be expected to demonstrate that all waste and off-site waste are capable of being legally and practically accommodated.

Waste Rock
The applicant is to specifically and separately describe how all mineralised/ ore-bearing rock and by-product that has potential to lead to Acid Rock Drainage will identified, isolated, handled, stored, stabilised and disposed of in a manner that will not give rise to risks of environmental pollution.

Process Waste
The applicant is required to prepare a detailed plan describing the treatment of all process wastes arising from the mining and preliminary processing of ore will be identified, assessed, handled, stored, transported and disposed, This is to include a description of all off-site wastes and their fates. The description will be expected to demonstrate that all waste and off-site waste are capable of being legally and practically accommodated.

Subsidence Prevention
1. The applicant is required to describe how pillars will react and how the stresses will be re-distributed on the resumption of mining, in particular involving pillar trimming or mining.

2. The applicant is required to describe the mining sequence as well as the ground stability measures to be taken to ensure no disturbance to the surface in the Garrylaun area where ground conditions are worse than other areas of the mine and the distance to surface is less.

Dewatering
The applicant is required to demonstrate the alternatives that exist to the proposed grouting of the K2 as a means of controlling of the impact outside of the western edge of the Galmoy Block.

Lot B - Other Information

Subsidence

The applicant is required to provide a description, assessment and explanation of the development of the sinkhole in 2002 in the same format as that used to examine the event of February 2014.

The applicant is required to provide an assessment of the potential of further sinkhole development along the main fissure, especially in the area of the CW & K Stope Collapse.

The applicant is required to provide a design of the proposed new subsidence monitoring points, a subsidence monitoring plan which includes planned frequency of monitoring, trigger levels and planned responses to these levels, and a location map of the stations.

The applicant is required to provide evidence or clarification of the statement below, in particular considering the 2002 collapse in the CW K Stope and the subsidence event of 2014.

The trends from the subsidence survey data over the life of the mine indicate that there is no subsidence on surface due to changes in the global stability of the mine workings within the orebodies.

The applicant is required to provide a qualitative description of the range of scenarios – from least likely to most likely – to describe the range of potential effects of recommenced re-watering on the creation of sinkhole risks arising from additional bedrock void space, increasing velocities and an accelerated rate of internal erosion and sediment transport.

The applicant is required to provide a qualitative description of the effect the re-watering and proposed de-watering will have on the fissures and fracture zones. Will the "cleaning out" of the fill material within the fissures increase the inter-connectivity of the structures and if so what are the likely impacts?

The applicant is required to provide a qualitative description of the range of potential interactions between unanticipated re-mobilization of void sediments and groundwater flows and the likely consequences for treatment of waters, mine operations and mine safety.

The applicant is required to provide a quantitative risk assessment of the likelihood of risk above 'background levels' based on the historically observed rate of occurrence in the vicinity of the Mine.

The applicant is required to provide a map of the areas of greatest potential risk – having regard to the analysis that identified proximity to the 'Main Fissure' as one of the main contributory factors leading to increased risk of subsidence.

The applicant is required to provide a schedule of the mitigation measures to anticipate, avoid and ameliorate the likelihood of sinkhole formation and consequent adverse effects on surface structures – especially the Tailings Management Facility, the Water Treatment

Impoundments, the Rathdowney Group Water Supply Scheme and other surface structures and facilities as well as adjoining dwellings, structures, roads and infrastructure.

The applicant is required to describe a mitigation measure – alternative to the planned grouting in the K2 - to prevent an impact on the supply to the RWSS.

Excavated/Imported Material & Wastes

25,000 tonnes of excavated material from the portal and decline is proposed to be excavated, stockpiled and reused on site. The applicant is required to provide assessment to confirm this material is suitable for site storage for up to 10 -12 years prior to infill at cessation. This should include where the material will be stored, how run-off will be addressed and how dust will be managed?

The applicant is required to demonstrate compliance with Guidance on the Waste Management Regulations 2012 and the Waste Management Act 1996 as amended.

As the extracted ore bearing material is being exported off site, the applicant should provide further information on the nature and quantity of any material to be returned to the site, or brought to site for infill at closure and should advise under what licensing or permitting regime it is proposed to operate this activity.

Lot C – specifically in Relation to Environmental Impact Assessment Report

Appropriate Assessment Screening
The Planning Authority is of the view that having regard to

(i) the scale of the development the scale of the wastewater discharge, the presence of discharges to surface waters and the location of the site within a protected pearl mussel catchment that impacts on the pearl mussel population,

(ii) the proximity to Galmoy Fen SAC, within 460m and failure of the applicant to adequately demonstrate that the fen and the conservation objectives of this SAC will not be affected,

that impacts on the Special Area of Conservation Objectives cannot be ruled out.

Furthermore it is noted that as per Section 4.4 of the assessment submitted that the report refers to mitigation measures as outlined below; however a Stage 1 assessment requires that the project is assessed in the absence of mitigation measures.

The applicant is requested to prepare a Natura Impact Statement to examine and assess the foregoing in detail.

Note: The Planning Authority requires the signature of the Ecologist on the NIS.

Item 2

Legal Rights

(a)The applicant proposes to discharge to the Glasha River and to the River Goul, the wayleaves and all necessary rights for any associated works need to be fully demonstrated. The applicant also needs to fully demonstrate the rights in relation to all access to all ventilation shafts.

(b)The applicant is advised that a third party submission has been received in relation to this application from MF Dineen & Co. Ltd. on behalf of Ryan Brothers Environmental Services (RBES); the applicant is invited to view the submission and address the issues raised therein.

Item 3

Environmental Impact Assessment Report

Overarching Items

I Major Accidents and/ or Disasters

- Review and revise the EIAR to demonstrate compliance with the requirement of the amended Directive to address 'expected effects deriving from the vulnerability of the project to risks of major accidents and/or disasters'. An Emergency Response Procedure which addresses environmental considerations should be provided.

II Assessment of Impacts

- Review and revise the assessment of impacts on all environmental factors in the EIAR, insofar as required to ensure compliance with the Regulations and draft EPA Guidelines. This should take account of the further information requested on the characteristics of the project. It should provide a sufficient level of detail on, and assessment of significance of, predicted impacts to show where mitigation measures are required and to enable the adequacy of mitigation measures to be checked.

- Review and revise the assessment of residual impacts in the EIAR to ensure that extent to which mitigation and monitoring will be effective in ameliorating predicted impacts is adequately and clearly assessed. To facilitate this, the links between predicted adverse impacts, (post-design) mitigation measures and residual impacts shall be clearly set out.

- Where design details are unavailable at this stage, the applicant should ensure that the assessment of impacts on all environmental factors in the EIAR establishes the 'outermost ('not to exceed') environmental parameters of the characteristics of the proposed project' (ref. s 3.5.8 of draft EPA Guidelines and further information recommendation regarding Chapter 4).

III Mitigation and Monitoring

- Revise the mitigation and monitoring proposals in the EIAR to ensure compliance with the relevant requirements in matters of clarity of commitment, reporting and achieving predicted residual effects, including associated triggers and actions in event of monitored exceedances or mitigation failures. The revised version should make clear which predicted impacts the individual mitigation and monitoring measures are intended to address. (Ref. s 3.8 of the draft EPA Guidelines).

- Provide a compendium of mitigation and monitoring measures in the EIAR for clarity and to facilitate the Council in meeting its obligations regarding conditions under Article 8a of the EIA Directive (2011/92/EU as amended by 2014/52/EU) in event of a grant of permission. (Ref. s 3.8.4 of the draft EPA Guidelines)

IV Presentation of Further Information

- The applicant shall provide 'A reference list detailing the sources used for the descriptions and assessments included in the report.' (ref. Annex IV(10) of the amended EIA Directive)
- For ease of reference and clarity, the further information relating to the EIAR shall be provided by way of a revised version of the EIAR rather than as supplementary addenda or other documents.
- For ease of reference and clarity, the applicant shall make it clear in their submission which specific parts of the EIAR have been revised, added or omitted.

The further information sought below is presented under the headings of the EIAR chapters

Non-Technical Summary

(a) The applicant is required to provide a revised Non-Technical Summary that conforms to the requirements of the amended Directive and the Guidelines. The revised document is to be significantly clearer and less detailed. The headings shall be aligned with those used in the EIAR. It shall enable general readers to gain a good general understanding of the site, the proposed development, the likely significant environmental impacts, proposed mitigation measures and residual impacts.

(b) The sections that deal with all aspects of geology, water-management, mining and mitigation need to be entirely re-written to render them free of technical terms and accessible to general readers.

(c) Clear scaled maps and simple diagrams should be used to illustrate the summary, as useful.

Note: A Glossary of Terms is also required for technical terms used throughout the EIAR – which could be included as an appendix or preferably at the end of each chapter.

Chapter 1 Introduction

(a) Provide a list of the individual experts involved in preparation of the EIAR showing what specific sections they worked on, what their involvement was (e.g. lead author, assistant, field surveyor/researcher), their qualifications, experience and any other relevant credentials. (Ref. section 2.5 of the draft Guidelines on the information to be contained in EIARs).

(b) Provide an overview of other consent processes that apply to the project describing associated environmental assessment requirements and how such assessments have been taken into account in the EIAR. (Ref. Articles 2(3), 4(4), 4(5) and 5 and Annex IV(8) of the amended Directive and s3.3.5 of the draft *Guidelines on the information to be contained in Environmental Impact Assessment Reports*, EPA, 2017).

(c) Provide specific details of the EIA scoping process to clearly show how the scope has:

- taken account of consultation feedback

- taken account of the relevant requirements of the EIA Directive (i.e. Directive 2011/92 as amended by Directive 2014/52/EU), including for example the risk of major accidents and/or disasters and climate change effects (due to and on the project)
- identified and ensured adequate assessment of all specific likely significant impacts of the whole project
- taken account of other relevant assessments under EU or national legislation.

Should the revised scoping identify that any additional elements of the whole project need to be assessed in the EIAR to ensure robust compliance with the legislation (taking account of applicable case law) then these elements shall be added to the scope and addressed in the Further Information submission. In this regard the applicant shall pay particular attention to the proposals for off-site processing of the ore and for sourcing of backfill material. They shall also consider all other significant secondary projects (ref s3.3.5 of the draft *Guidelines on the information to be contained in Environmental Impact Assessment Reports*, EPA, 2017).

(d) Review and revise the consideration of alternatives to ensure that significant alternatives at all levels that were considered during the evolution of the proposed design for the whole project (ref. Annex IV 1(b) of the amended Directive) are adequately described showing how environmental effects informed the process of choosing the proposed option at key stages, particularly for elements with potential to cause significant environmental effects.

Chapter 2 Project Description

(a) The applicant is requested to revise the project description to ensure that it adequately describes the **whole project** sufficiently to clearly demonstrate full compliance with the amended EIA Directive. This should include but not be limited to:

- Construction stage environmental management.
- Pillar management system and underground failure prevention plan.
- Proposals for processing the extracted material showing how all applicable environmental assessment and consent requirements will be addressed.
- Waste management (including spoil).
- Closure, restoration and aftercare management.

(b) A Construction Environmental Management Plan (CEMP) should be provided. This should detail how all significant elements of the construction works will be undertaken and managed in accordance with relevant legislative environmental requirements and best practice to ensure that environmental effects are suitably controlled and managed. The CEMP shall describe all details that are relevant in this context and shall be generally restricted to these aspects. All monitoring proposals described in this Plan shall include clear trigger values along with actions that will follow in event of exceedance or failure of controls or mitigation measures. Clear and transparent environmental compliance reporting procedures shall be included. This Plan shall include but not be limited to the elements described in the separate report on required *Project Information*.

Chapter 3 Population and Human Health

(a) Review the information submitted in Section 3.3.1 in relation to the residences that lie within 250m and 500m of the plant site boundary, the review should take account of dwellings within within 250m and 500m of all the ventilation shafts. As part of this review, the applicant shall demonstrate that any extant and pending planning permissions have been considered. In addition the applicant shall submit the details of the source and date of the

aerial photography consulted, and the date of the data set consulted from the Department of Communications, Climate Change and Environment mapping resources.

Clearly demonstrate the location of existing and permitted dwellings relative to the existing and proposed underground workings of the mine.

The foregoing information shall be included within the EIAR, and also mapped at a scale such that all of the information is clearly legible.

(b) Section 3.3.8 states that the applicant will develop an in-depth and robust Health and Safety policy prior to the development of the mining operations; this is required to be submitted as part of the planning application.

(c) Section 3.4.4 refers to agricultural enterprises supplied by the Replacement Water Supply Scheme. The applicant should clarify the number of connections that previously existed in relation to all uses to the RWSS, and the potential for newer connections based on an extended cone of depression and/ or more recent developments since the mine closure. The applicant should also confirm that the cost of any such connections and works associated with the provision of this supply will be borne entirely by the applicant.

(d) Traffic

- Provide details of the traffic generation arising from the original mining operation in order that the Planning Authority can ascertain if there is a significant increase or decrease in traffic generation for the proposed development when compared to the previous operation.

- It is noted that 34 HGV (30t) return trips will be generated on operational days as part of the offsite processing. The applicant is requested to clarify if the return trips are empty vehicles or if backfill material is to be returned from the processing site or collected en route. It is noted that approximately 300,000 tonnes of imported backfill material from local quarries will be required over the indicated lifespan of this development and the associated traffic generation has been accounted for separately.

- Having regard to the existing traffic volumes it is noted that the percentage HGVs at the development entrance is approximately 12% of the total. The proposed development will potentially increase the total HGV traffic volumes by 30-40% compared to the background HGV volume. In light of this, the applicant is requested to carry out a structural assessment (FWD - Falling Weight Deflectometer) of the regional road network from the development access to the M8 Motorway to determine the residual life and structural capacity of the route and to determine any structural improvements to the network arising from the increased volumes of HGVs over the life span of the development. This assessment shall include a structural survey of all bridges along the proposed routes to link with the national roads.

- The Non-Technical Summary indicates that the majority of the traffic will exit the development onto the R435 towards Johnstown. The applicant is requested to provide the projected split of traffic exiting the development to the north and south and the percentage HGV development traffic turning south/north. In the event that the volume of traffic heading north towards the Laois County Boundary is significant, the applicant shall extend that structural assessment of the R435 to include the section of the R435 between the

development access and the Laois County Boundary as this is generally in poorer condition.

- It is generally noted that there is a high volume of HGV traffic using the R639 through the villages of Urlingford and Johnstown and that this potentially may be attributed to the avoidance of tolls on the M7/M8. The applicant shall submit details of measures to ensure that the proposed route to the M8 motorway as indicated in the Transport and Traffic Assessment is adhered to by development traffic involved in the off-site processing operation in particular.

- There is a National School and proposed playground located on the R435 to the north of the junction of the R435 and R502 on the proposed route from the development to the M8 motorway. In light of the proposed increase in HGV's, the applicant is requested to submit proposals for traffic calming measures at this location in the interests of traffic safety.

- It is noted that an environmental waste management company was operating from the development site. The applicant is requested to clarify the number and scale of operations of any businesses operating from the existing site and whether these will continue to be present during the proposed mining operations and if the associated traffic generation has been incorporated into the overall traffic assessment.

(e) Section 3.7 states that there are no other extractive industry or large industrials sites located in the immediate vicinity of the proposed development and therefore there are no negative cumulative impacts on the environ surroundings the proposed development with regard to human health and population. However the report does not take into account the large scale development proposed at the former Lisheen Mine or the recently permitted Retreat Centre at Rathlogan; the applicant should revise the EIAR to assess the potential for Cumulative Impacts during the construction and operation phases of these and other relevant large scale developments, including those existing, permitted at scoping for EIAR stage.

(f) The applicant is required to revise the EIAR to provide a detailed account of all public consultation undertaken by the applicant.

Chapter 4 Biodiversity

Should any alterations or amendments be required for the Hydrological Assessment then the Aquatic Ecology assessment must be revised to take account of these changes with reference species and habitats that rely on water quality.

Chapter 5 Soils & Geology

(a) 25,000 tonnes of excavated material from the portal and decline is proposed to be excavated, stockpiled and reused on site. The applicant is required to provide assessment to confirm this material is suitable for site storage for up to 10 -12 years prior to infill at cessation. This should include where the material will be stored, how run-off will be addressed and how dust will be managed?

(b) As the extracted ore bearing material is being exported off site, the applicant should provide further information on the nature and quantity of any material to be returned to the site, or brought to site for infill at closure and should advise under what licensing or permitting regime it is proposed to operate this activity.

(c) The applicant is required to identify and quantify the source of all backfill and to confirm that it is available from a permitted and licensed source. If more than one type is proposed, then map the locations where different types will be used. The applicant is further required to clarify whether and how the traffic impact assessment accommodates the transportation of backfill and its impacts.

(d) The applicant is to specifically and separately describe how all mineralised/ ore-bearing rock and by-product that has potential to lead to Acid Rock Drainage will be identified, isolated, handled, stored, stabilised and disposed of in a manner that will not give rise to risks of environmental pollution.

(e) The applicant is required to describe how pillars will react and how the stresses will be re-distributed on the resumption of mining, in particular involving pillar trimming or mining.

(f) The applicant is required to submit a Pillar Management System and Underground Failure Prevention Plan.

(g) The applicant is required to describe the mining sequence as well as the ground stability measures to be taken to ensure no disturbance to the surface in the Garrylaun area where ground conditions are worse than other areas of the mine and the distance to surface is less.

(h) The applicant is required to provide a description, assessment and explanation of the development of the sinkhole in 2002 in the same format as that used to examine the event of February 2014.

(i) The applicant is required to provide an assessment of the potential of further sinkhole development along the main fissure, especially in the area of the CW K Stope Collapse.

(j) The applicant is required to provide a design of the proposed new subsidence monitoring points, a subsidence monitoring plan which includes planned frequency of monitoring, trigger levels and planned responses to these levels, and a location map of the stations.

(k) The applicant is required to provide evidence or clarification of the statement below, in particular considering the 2002 collapse in the CW K Stope and the subsidence event of 2014.

(l) The trends from the subsidence survey data over the life of the mine indicate that there is no subsidence on surface due to changes in the global stability of the mine workings within the orebodies.

(m) The applicant is required to provide a qualitative description of the range of scenarios – from least likely to most likely – to describe the range of potential effects of recommenced re-watering on the creation of sinkhole risks arising from additional bedrock void space, increasing velocities and an accelerated rate of internal erosion and sediment transport.

(n) The applicant is required to provide a qualitative description of the effect will the re-watering and proposed de-watering have on the fissures and fracture zones. Will the "cleaning out" of the fill material within the fissures increase the inter-connectivity of the structures and if so what is the likely impacts?

(o) The applicant is required to provide a qualitative description of the range of potential interactions between unanticipated re-mobilization of void sediments and groundwater flows and the likely consequences for treatment of waters, mine operations and mine safety.

(p) The applicant is required to provide a quantitative risk assessment of the likelihood of risk above 'background levels' based on the historically observed rate of occurrence in the vicinity of the Mine.

(q) The applicant is required to provide a map of the areas of greatest potential risk – having regard to the analysis that identified proximity to the 'Main Fissure' as one of the main contributory factors leading to increased risk of subsidence.

(r) The applicant is required to provide a schedule of the mitigation measures to anticipate, avoid and ameliorate the likelihood of sinkhole formation and consequent adverse effects on surface structures – especially the Tailings Management Facility, the Water Treatment Impoundments, the Rathdowney Group Water Supply Scheme and other surface structures and facilities as well as adjoining dwellings, structures, roads and infrastructure.

Chapter 6 Water

(a) The applicant is required to assess in detail the environmental impact of the proposed Glasha discharge pipeline. This is included in the red line boundary but outside of the blue line boundary (lands under ownership of the applicant).

(b) A second discharge point is proposed to the Glasha Stream. Details of any consultation with relevant stakeholders and application for a licence to discharge should be provided. It is proposed to discharge up to 5 MLD of potable groundwater to the Glasha Stream when the flow in the receiving stream is expected to be high. The applicant should provide additional assessment to determine the impact of this discharge on flood levels and WFD requirements for the receiving water. The applicant should also present the likely impact on the primary discharge point, River Goul should a licence to the Glasha Stream not be permitted. The water to be discharged is from a previously worked mine and therefore there is a potential risk of contaminated minewater being produced.

(c) The applicant is required to describe what measures will be deployed at the Goul outlet pipe to prevent sediment entering the river.

(d) The applicant should identify any discharge to ground and show suitability for discharge in terms of the EPA Guidance on the authorisation to discharge to Ground, EPA 2011. This shall address surface water from hard surfaced areas and roofs.

(e) The applicant should identify any transfer of water outside of the catchment from which it originates. Any impact in terms of water balance, water flow regime and water quality should be assessed and the applicant should demonstrate compliance with the WFD.

(f) The applicant is required to describe, in detail, the potential range of behavior of groundwater contaminants during re-opening – with particular details required for the potential mixing of 'clean' and 'dirty' water caused by hydraulic movement during dewatering. The applicant should provide the data which supports their thesis that the risk of "dirty" groundwater being generated is low.

(g) The applicant should demonstrate the suitability of the wastewater treatment pond and treatment plant design due to the fact that the abstracted groundwater will have different chemical characteristics due to the reflooding of a worked orebody. The applicant should demonstrate how this water will be treated - it is acknowledged that this is addressed in outline in the EIAR but we request details of the nature and scale of the unit processes required for treatment, including design equations used and the Basis of Design, quantities of chemicals likely to be needed, storage facilities for these chemicals and quantities of waste sludges likely to be generated by treatment. Information should also be provided on how the treatment system will be controlled and operated and how water can be determined to be acceptable before it is sent to the pipeline for discharge. In addition, during the initial dewatering period, there is an increased risk of high sediment and metals in discharge water, how has the wastewater treatment plant design taken this into account?

(h) During the initial dewatering period, there is an increased risk of high sediment and metals in discharge water. How has the AA screening assessment considered the impact of this (without mitigation) on receiving waters and Natura sites which are hydrologically connected with the mine. The applicant is required to present an assessment of the suitability of the capacity and wastewater treatment pond (8500m3) for this initial stage of work when the water chemistry may be more variable.

(i) What baseline information is available to confirm the likelihood that mining of the K2 orebody will not result in greater inflow than experience elsewhere in the aquifer which has undergone mining to date? What experience exists to show that grouting will work in preventing increased inflows should significant inflow arise? The applicant should demonstrate the impact on the existing water scheme with and without mitigation.

(j) The applicant is required to describe the chemical composition of the 'clean water' and the proposed testing regime to determine its values?

(k) The applicant is required to describe the estimated time required to dewater the workings, until steady flow is reached.

(l) The applicant is required to provide the basis of the sizing of the water storage and treatment pond (8500m^3) to demonstrate its adequacy for storage, treatment and protection of receiving water during initial dewatering (when sediment content will likely be at its highest) and operation.

(m) We note that during operation, groundwater discharge (clean and dirty water) is between 10 MLD – 19 MLD (seasonally variable) and there is an estimated increase in discharge during initial dewatering due to aquifer storage of 3 MLD. The applicant notes there is a desire to undertake the initial dewatering during summer. The applicant should demonstrate water treatment pond has adequate capacity should the initial dewatering extend into winter months.

(n) Considering the EPA status for the River Goul water body as "Poor", the applicant is required to demonstrate how this project meets the requirements of the recently published River Basin Management plan for Ireland (2018-2021), EPA 2018 and overall WFD requirements to bring water body status to "Good" status. The applicant should also demonstrate the impact of dewatering on the groundwater body status particularly in relation to quantitative impact during the operation of the mine.

(o) The EIAR notes that "extensive ground investigation programmes in the areas around Galmoy mine have not identified similar features. In effect the ground investigations have identified that the palaeokarst in the mine is primarily "choked" with weathered material and debris that has been washed into the system (choking it over time)". As the dewatering has potential to remobilise material, and in light, of the study of the sinkhole which occurred on 14-15th February 2014, the applicant needs to provide further information regarding the programme for ongoing geotechnical stability within the greater mine area and in particular near high risk areas such as the tailings pond.

(p) The applicant has identified that a propietary effluent treatment system will be installed for domestic sewage and the treated effluent pumped to the water treatment pond. Please provide further information on the suitability of this treatment plant for the number of personnel on site and capacity of the water treatment pond for the discharge from same.

(q) The applicant is required to prepare detailed proposals for substantial monitoring and modelling to anticipate and avoid adverse effects on groundwater and water supply.

(r) In view of the highlighted potential risk on groundwater abstraction for a public water supply (Ref, Irish Water Submission May 9th 2018), the applicant should consider mitigation through provision of an alternative safe secure public water supply. As the submission has highlighted the potential risk to the supply in terms of yield and water quality, consideration should be given to a replacement water supply. Any re-drilling of wells would need to be undertaken in compliance with Irish Water current guidance for drilling and testing of water supply wells. It is recommended that consultation with Irish Water should be undertaken to determine suitable siting of wells, trial well testing, design of production wells, water treatment and associated water pipe infrastructure.

(s) The revisions to the scope of the EIAR should include consideration of the implications of any changes in the project details included in the response to the request for further information, including any mitigation measures related to protection of the public water supply. The consent procedures and environmental assessment requirements of such changes or measures should be outlined and taken into account.

(t) The applicant has proposed grouting within the K2 orebody as mitigation for reducing impact of dewatering on the surrounding natural hydrogeological regime. The applicant should provide additional information on the basis for assessment of likely inflows during proposed dewatering. The limestone is karstified and dolomitized, resulting in dynamic changes in bedrock structure over time, particularly where the water table has been altered. As such the assessment should also consider any impact of re-flooding and subsequent dewatering on the model predictions. This further assessment should consider the impact on the local hydrogeological environment (water level and quality) extending to the existing Irish Water Public Water Supply (WW2B and WW1A).

(u) The applicant is required to demonstrate how they will avoid any increase in suspended solids in the RWSS wells; WW-1A, WW-2B during mining in the K5 / K15 area at the top of the K Orebody the WW2B.

(v) The applicant is required to describe the reason for the elevated nickel at the CW West Vent and the G South Vent. Both vent shafts are outside of the orebodies.

Chapter 7 Air & Climate

(a) The applicant is required to describe on-site dust management systems – particularly that arising from vehicular movements between the mine and the Teepee.

(b) The applicant is required to describe the location and monitoring/reporting regimes for dust [on-site and off-site], noise and vibration [especially over the main mining areas of the K2 and Garrylaun in close proximity to sensitive residences in the vicinity of the K2 Orebody and on the Cell 3 of the K Orebody].

(c) The applicant is requested to complete the noise assessment and demonstrate that the operation would meet the limits of 45 dBA and 55dBA for night and day respectively.

(d) The applicant shall clarify any necessary mitigation measures for the noise sensitive receptor located 100m south of the southern-most ventilation fan.

(e) The applicant is required to describe: the timing (hour of day and day of week) when blasting will occur; the blasting times; and whether blasting will take place on Saturday mornings or not.

Chapter 8 Noise

(a) Review the information submitted in Section 8.2.1 in relation to the residences that lie within 250m and 500m of the plant site boundary, the review should take account of dwellings within 250m and 500m of all the ventilation shafts. As part of this review, the applicant shall demonstrate that any extant and pending planning permissions have been considered. In addition the applicant shall submit the details of the source and date of the aerial photography consulted, and the date of the data set consulted from the Department of Communications, Climate Change and Environment mapping resources.

Clearly demonstrate the location of existing and permitted dwellings relative to the existing and proposed underground workings of the mine.

The foregoing information shall be included within the EIAR, and also mapped at a scale such that all of the information is clearly legible.

(b) Section 8.5 states that noise generating activities associated with the proposed development will be relatively limited in comparison to the previously permitted Galmoy Mine. As per the HSE Scoping recommendation contained with the EIAR Appendices – with regard to the assessment of any potential impacts from noise, the Environmental Health Services considers the change in the noise environment to the potential impact and not assessment against an absolute limit. The potential change in the noise environment should be stated in the EIAR.

(c) It is noted that noise from ventilation fans will fall below 45dBA at a distance of 150m to 200m. The applicant shall clarify any necessary mitigation measures for the noise sensitive receptor located 100m south of the southern-most ventilation fan.

(d) Section 8.5 states that the crusher will operate at a rate of ca. 58 tonnes per hour for ca. 17 hours each day. This operation will occur within the existing tepee structure. An assessment of the noise impacts associated with crushing works in the tepee is required as

part of the EIAR, and details of any necessary mitigation measures and their anticipated effectiveness.

(e) With respect to the Noise Section of the EIAR, it would appear that the noise assessment has not been completed, as further works will be done in the future to finalise the assessment and recommend appropriate mitigation to ensure compliance with the night-time limit. It is necessary at planning stage as part of an Environmental Impact Assessment to fully assess all potential environmental impacts. The applicant is requested to complete the noise assessment and demonstrate that the operation would meet the limits of 45 dBA and 55dBA for night and day respectively.

Chapter 9 Vibration

(a) Section 9.1.1 states that Shanoon will ensure that good communication is in place to explain the process to all residences (new and old) and ensure there is no worry caused due to lack of understanding. Details are required of the proposed communications strategy.

(b) Section 9.4.2 states that the 2012 dates shows that the highest recorded vibration level was measured on the 14th February 2012 at 7.5 mm/ sec rppv with an air overpressure of 81.94 dB. Whilst it is noted that this is below the daytime limit of 8 mm/second, the applicant is requested to clarify the contributory factors to this comparatively high level.

(c) Section 9.0 of the Non-technical summary states that blasting will take place twice daily; however section 9.5 states that blasting will be carried out on each working day at approx. 07.30, 15.30 and 23.30; you are required to clarify this discrepancy.

Chapter 10 Landscape

Section 10.4.1 states that all mining will be by underground means and therefore will not create any impact to the surface landscape.

This does not take account of the previous sinkhole or subsidence event, and the residual impact on the landscape; the EIAR should be revised to take account of this potential.

Chapter 11 Material Assets

(a) 25,000 tonnes of excavated material from the portal and decline is proposed to be excavated, stockpiled and reused on site. The applicant is required to provide assessment to confirm this material is suitable for site storage for up to 10 -12 years prior to infill at cessation. This shall include where the material will be stored, how run-off will be addressed and how dust will be managed.

(b) The applicant is requested to demonstrate compliance with Guidance on the Waste Management Regulations 2012 and the Waste Management Act 1996 as amended.

(c) As the extracted ore bearing material is being exported off site, the applicant is requested to provide further information on the nature and quantity of any material to be returned to the site, or brought to site for infill at closure and should advise under what licensing or permitting regime it is proposed to operate this activity.

Chapter 12 Cultural Heritage & Archaeology

Section 12.8 states no worst case scenario involving cultural heritage has been identified. Having regard for the potential for subsidence, which has been raised earlier in this report, it

is recommended that Chapter 12 is informed and reviewed following the revised findings in relation to the potential impacts from subsidence.

Chapter 13 Interactions

(a) The applicant shall provide a revised chapter taking account of all changes to the project and assessments of environmental factors, as required by the request for further information.

(b) With regard to cumulative impacts the applicant should revise the EIAR to take account of large scale projects that are existing, permitted or within the Scoping process for EIA that may contribute to cumulative impacts with particular regard to impacts on water, and from construction traffic using the routes through Johnstown and Urlingford, including potential noise impacts.

Note:

In addition to ten paper copies, the applicant is requested to submit ten electronic copies of the complete further information response.

Your application will be held in abeyance pending receipt of the above information.