'ag obair leis an bpobal'
'working with the community'

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

Fón/Phone: 067-44652
Facs/Fax: 067-44654
Gréasán/Web: www.tipperarynorth.ie
r-phost/email:
planning@northtippcoco.ie

An Rannóg Pleanála, Oifigí Cathartha, Bóthar Luimnigh,
An t-Aonach, Contae Thiobraid Árann
Planning Section, Civic Offices, Limerick Road, Nenagh, Co. Tipperary

Our Reference	Your Reference	Date
13/51/0275	**P0088-04**	**4th December, 2013**

Re: Notification under Section 87(1E)(a) of the EPAs, as amended

Dear Sir/Madam,

I refer to your letter dated 26th November, 2013 regarding the above. The following is the information requested by you:

Item No. 1:
Lisheen Milling Limited was granted planning permission on 6th November, 2013 under Planning Application Reference 13/51/0275 for Permission for development consisting of modification of the permitted water impoundment facility (permitted under An Bord Pleanala Ref. No. PL22.100093 (North Tipperary County Council Reg. Ref. PLC17663) including use of the facility to provide for the storage and management of mine tailings within the same structure (for the purposes of extending life of mine), and associated capping and reinstatement activities. The development also includes: the installation of spigots and reclaim pumps; and all other ancillary site development works.

Item No. 2:
Documents relating to EIA carried out by North Tipperary County Council please see attached Planner's Report and Environment Engineer's Report

Item No 3:
The Planning Authority have no observations in relation to the licence application.

A copy of the Environmental Impact Statement submitted with the application and associated documentation are available for inspection on our website www.tipperarynorth.ie

If you have any queries, please do not hesitate to contact me.

Yours faithfully,

for Director of Services

Bea Claydon
Programme Officer
Environmental Licensing Programme
Office of Climate, Licensing & Resource Use
Environmental Protection Agency
Headquarters, PO Box 3000
Johnstown Castle Estate
Co Wexford

NORTH TIPPERARY COUNTY COUNCIL

PLANNING & DEVELOPMENT ACTS 2000-2010

PLANNING REPORT

Reference:	13/51/0275
Applicant:	Lisheen Milling Limited
Development:	Permission for development consisting of modification of the permitted water impoundment facility (permitted under An Bord Pleanala Ref. No. PL22.100093 (North Tipperary County Council Reg. Ref. PLC17663) including use of the facility to provide for the storage and management of mine tailings within the same structure (for the purposes of extending life of mine), and associated capping and reinstatement activities. The proposed development also includes: the installation of spigots and reclaim pumps; and all other ancillary site development works. An Environmental Impact Statement (EIS) and Natura Impact Statement (NIS) have been prepared and will be submitted to the Planning Authority with the Planning Application. The application relates to development which comprises, or is for the purposes of an activity requiring an Integrated Pollution Prevention and Control Licence under the Environmental Protection Agency Acts, 1992 to 2013 (EPA Licence Reg. No. P0088-03).
Location:	Killoran, Thurles.
Date of Site Visit:	07/09/2013 and 13/09/13
Site Notice:	Adequately displayed

Site Location and Description:
Lisheen Mine has been operational since 1997, with production underway since 1999. The mine is located c. 12 km north east of Thurles and c. 4 km south west of Templetouhy.

The current mining operation at Lisheen comprises the following principal facilities:

- A 1.5 km long main decline, providing primary access to four key mining zones;
- A mine ventilation system with above ground vent raise structures;
- Underground primary crushing plant and conveyor system for transport of mined rock above ground;
- Surface ore stockpile and ore processing mill;
- Paste backfill plant, operational since 2005;
- Tailings Management Facility (c. 68 ha.), with approximately 10 ha. capped in 2010, and Phase 2 capping currently being undertaken as of May 2013. Progressive capping is expected to continue in the next 2 years;
- Minewater treatment plants, conditioning ponds and infrastructure for discharge of treated mine-water to the Drish and Rossestown Rivers; and
- Site offices, maintenance shops, weighbridge, access roads and associated facilities.

Proposed Development:
The permitted water impoundment facility is proposed for modification. It is located adjoining the existing Tailings Management Facility (TMF). The structure is c. 9.0 hectare (ha.) in size, and is accessed via internal haul roads within the Lisheen Mine footprint. The dam wall is designed in a similar manner to the original main TMF design, which incorporates a composite lining system specifically designed to store both water and tailings, and consists of a high density polyethylene (HDPE) geomembrane over a geosynthetic clay liner (GCL). It is proposed to place tailings in this structure over a c. 12 month period, and then to cap and restore this facility. The proposed modification of the permitted water impoundment facility will still allow for the ancillary use of the structure for surface water management purposes as part of the site's overall water management system.

Operation phase
The new tailings facility will be operated by discharging the tailings from spigots on the dam crest. The spigots will be opened sequentially and the tailings will be discharged uniformly over the new TMF. When tailings are deposited in the new facility it will be done at a rate of about 3,500 tonnes/day. Once placed, the tailings will have a consolidated density of about 1.9 tonnes/m3 and will thus be filling the facility at a rate of about 1,850 m3/day.

It is proposed that sufficient water will remain in the structure to provide a 0.5-1m water buffer and to provide a suction head for the reclaim pumps. The reclaim pumps on the new facility will immediately return tailings water to the reclaim pumps on the main TMF which will provide the required retention time for the settling of any dirty tailings water.

Closure Phase
The new tailings facility will be capped with approximately 700 mm of Type B material (limestone or shaley limestone) together with 300 mm of growing material consisting of 50% peat and 50% soil. The procedure would be the same as currently undertaken on the existing/permitted TMF.

The cap is to be maintained in a saturated condition. The cap will be initially placed on top of the tailings at max. 130.5mOD and the top of the growing medium will be at approximately 131.5 mOD (max.), at the crest elevation. If the mine closes before the tailings reach 130.5 mOD, then the cap will be lower than the crest accordingly.

Preplanning Discussion:
2nd July, 2013 Meeting with Nuala O'Connell (NTCC), Andre Trystman (Lisheen Mine), Stephen Wheston (Lisheen Mine) Conor Wall, (Golder Associates)

Planning History of Site:

File No.	Status	Name	Development Address	Description
5117663	Granted	Minorco Lisheen Ltd/Ivernia West Ltd,	Barnalisheen, Ballyerk, Cooleeney, Derryfadda	Zinc/lead mine with ore processing and related facilities.
5124572	Granted	Anglo Base Metals (Irel) Ltd	Derryville, Templetuohy	Extraction of Borrow material
03511001	Granted	Anglo American Lisheen Mining Ltd	Killoran Moyne Thurles	erect a 61.5m high mast of galvanised tubular steel construction to measure and record wind speed and direction at the existing Mine site
04511667	Granted	Anglo American Lisheen Mining Ltd	Ballyerk, Derryville & Killoran Moyne	extension to existing mine and construction of 3 No. ventilation shafts, two of which have evases and the third a hoist house. An EIS has been submitted with this application.
06510743	Incomplete Application	Anglo American Lisheen Mining Ltd	Barnalisheen, Cooleeny, Derryfada, Derryville and Killoran	22 No. wind turbine generators, access roads, craneage pads and associated infrastructure. An environmental Impact Statement has been submitted with this application.
06510773	Granted	Anglo American Lisheen Mining Ltd.,	Barnalisheen, Cooleeny, Derryfada, Derryville	wind turbine farm consisting of 22 No. wind turbine generators, access roads, craneage pads and associated infrastructure. An Environmental Impact Statement will be submitted to the Planning Authority with this

			and Killoran	Application
08511188	Granted	SWS Energy Ltd	Kiloran Moyne Cooleeny	1 no. meteorological mast of 61.5m in height (pl ref 03/51/1001) for the limited purpose of monitoring wind and climate conditions for development referenced in planning application 06/51/0773
09510142	Granted	SWS Energy Ltd.,	Kiloran Cooleeny Moyne	erect one no. permanent meteorological mast of 95 metres in height with internal access road to be utilised for the limited purpose of monitoring wind and climate conditions for the development referenced in North Tipperary County Council Pl. Ref. 06510773 and ABP PL 22.222142
11510446	Incomplete Application	Lisheen Mine	Lisheen Moyne Templetuohy	develop the Derryville Island Ore Deposit EIS accompanies this application and the Major Accidents Regulations apply to the proposed development
12510016	Incomplete Application	Lisheen Mine	Derryville Co. Tipperary	develop the Derryville Island Ore Deposit underground workings as an extension to the existing Lisheen Mine and the construction of 1 No. ventilation shaft. The Lisheen Mine is subject to the conditions of IPPCL No. P0088-03. The development will include underground mine workings as an extension to the existing Lisheen Mine and construction of 1 No. ventilation shaft and associated surface building. An EIS accompanies this application and the Major Accident Regulations apply to the proposed development.
12510034	Granted	Lisheen Mine	Derryville Moyne Templetuohy	develop the Derryville Island Ore Deposit underground workings as an extension to the existing Lisheen Mine and the construction of 1 No. ventilation shaft. The Lisheen Mine is subject to the conditions of IPPCL No. P0099-03. The development will include underground mine workings, as an extension to the existing Lisheen Mine and the construction of 1 No. ventilation shaft and associated surface building. An EIS shall be submitted to the planning authority with the application. The Major Accident Regulations apply to the proposed development.
12510275	Granted	Bord na Mona Energy Ltd.,	Killoran Thurles Co. Tipperary	extension to the existing Lisheen substation including the construction of a new control building, transformer bay, transformer/transformer bund, 38kV cubicle and the extension of the existing 110kV busbar. Ancillary works to include the realignment of the internal mine access track to facilitate the proposed extension and the erection of a new compound palisade fence to secure the extension

Planning History of Adjacent Sites:
Not applicable.

Development Plan Policy:
Policy ENV 1: General Policy
It is the policy of the Council to implement the Habitats Directive and that where relevant, projects will be screened by the Council for the need to undertake a Habitats Directive Assessment under Article 6 of the Habitats Directive.

Policy ENV 5: Water Framework Directive
It is Council policy to implement the provisions of any water quality management plans prepared at a national, regional or local level. These policies concern the protection of surface and groundwater resources from adverse effects of development projects.

Policy ENV 7: Groundwater Protection
It is the Council's policy to protect groundwater resources and drinking water catchments.

Policy ENV 17 Water Protection
Land uses shall not give rise to the pollution of ground or surface waters.

Policy ENV 18: Flooding
It is the policy of the Council to implement the recommendations of the DoEHLG Guidelines entitled 'The Planning System and Flood Risk Management' in the management of development within the County.

Policy ENV 43: Noise and Dust
It is the policy of the Council to seek to minimise the noise through the planning process by ensuring that the design of future developments incorporates measures to prevent or mitigate the transmission of noise and vibration where appropriate.

Policy ECON 1: Employment Growth and Promotion
It is the policy of the Council to promote, encourage and facilitate enterprise and employment throughout the County.

Policy ECON 4: Masterplan for Lisheen Mine Site, Moyne Templetouhy, Thurles
It is a policy of the Council to co-operate with the owners/operators of the Lisheen Mine site in the promotion and the development of lands situated at Moyne Templetouhy to provide for proper planning and sustainable development of the area. The Council will promote development which will provide for the following:
(a) Reuse of existing infrastructure within the mine complex wherever possible.

Policy HERT 26: Archaeology
It is the policy of the Council to protect all monuments included in the Record of Monuments and Places. The Council will also seek to protect, where practicable, the setting of and access to sites, views and prospects of the sites and will ensure sympathetic development adjoining and in the vicinity of sites.

Policy HERT 29: Designated Environmental Sites
It is the policy of the Council to maintain the quality and conservation value of designated environmental sites, including SACs, cSACs, SPAs, cSPAs, NHAs and pNHAs, and when assessing development proposals to provide for the protection, conservation and enhancement of wildlife habitats and designated sites.

Policy HERT 29a: Protection of Designated Environmental Sites
It is the policy of the Council to restrict any development which would be harmful to or that would result in a significant deterioration of habitats and/or disturbance of species in a SAC, cSAC, SPA, cSPA, NHA or pNHA.

Observations from Prescribed Bodies:
Department of Arts, Heritage and The Gaeltacht - It is recommended that the archaeological conditions be attached to any grant of planning permission to ensure the recording and/or preservation of any archaeological material/features impacted upon by the development.

Department of Arts, Heritage and the Gaeltacht - It is recommended that further information be requested to clarify the following:

- NIS - The tailings are to be placed to a final height 130.5m O.D. and then capped. EIS - The tailings can also be placed at a lower level and lower than the crest, if the mine closes before the final level is reached. The NIS should assess this option as *further information.*
- According to pp. 19-20 of the NIS, the main mitigation method to avoid significant impacts on downstream water quality will be the provision of a wetland treatment system which will be agreed with Inland Fisheries

and this Department once formal closure activities commence. It is essential that an adequately sized wetland system is designed in sufficient detail to allow a full assessment of its efficacy, **before** the decision is made to approve the development. Not to do so represents an inadequate EIS. This is needed to avoid reasonable scientific doubt that an unspecified type of wetland is adequate to deal with long-term treatment of runoff water. In particular has sufficient land been set aside for an adequate wetland? This should be requested as *further information.*

• The NIS should refer to an assessment of the long-term geotechnical stability of the impoundment wall of the planned.

Inland Fisheries Ireland, no report to date

Waterways Ireland, no report to date

Office of Public Works, no report to date

Dept of Communications Energy & Natural Resources, No fundamental reason why proposed development cannot proceed without causing serious problems and it is therefore considered that in relation to mining issues, there is no reason why Planning Permission should not be granted.

Environmental Protection Agency, The EIS appears to address the key points in relation to the environmental aspects if the proposed activity which related to the matters that come within the functions of the Agency

Health Service Executive (Environmental Health Servcie (EHS), No issues with adequacy of EIS. No on-going complaint investigations regarding the operation of the mine or associated activities.

Water: The EIS includes detail engineer designs and technical calculations on water balance and chemistry and complex modeling. The design of the water impoundment facility is the same as the existing TMF and both covered by same planning permission and IPPC Licence, therefore, there is no reason to suggest that the new cell will not perform as per existing TMF and no predicted increase in emissions above the already licenced emission value limits.

Air: Main potential impact has been identified as a potential increase of dust levels at capping phase. Short term impact with no significance to the overall air environment. The residual impacts after implementation of the proposed mitigation measures are not considered significant. Proposed mitigation measures to be implemented as part of any permission granted.

Noise: Noise emissions are not predicted to exceed current limits set down in existing IPPC Licence providing that capping/closure activity only takes place during day time hours (07.00 – 21.00).

Closure, Restoration and Aftercare Management Plan (CRAMP): The critical issue for EHS in whether the proposal, if granted, can be adequately incorporated onto CRAMP and what effects if any the proposal will have on the existing CRAMP. From information contained in the EIS and consideration of the design and operation of the proposal, the existing CRAMP should not be adversely impacted. If granted permission, the proposal would be able to be incorporated into the CRAMP.

Conclusion: Providing the mitigation measures identified in the EIS are implemented in full and the monitoring and environmental management applied to the existing TMF are extended to the proposed new facility, the EHS has no adverse comments to make.

Department of Public Health: The External Emergency Plan required for Category A sites under the Extractive Waste Directive, which is in development by NTCC for this site, should include the proposed extension (water impoundment structure) to the TMF if the proposal is approved.

Objections/submissions:

Unsolicited information received 25/09/2013 from Golder Associates on behalf of Lisheen Milling Ltd. in response to prescribed bodies submissions:

DoAHG (Ecology)

- Tailings placed at Lower height than planned
  If the cap were to be lower than 130.5mOD, this would have no effect on the quantity and quality of run-off projected to discharge from the Phase 3 (modified cell). The SWS report included in the NIS assesses such water volumes, irrespective of the final height of the cap. No requirement to update the NIS as suggested as there are no likely adverse impacts, which have not been considered in the NIS.
- Design of permitted wetland
  Figure 8 in Attachment 1 for the submission (as included in NIS) depicts the final closure plan for the main TMF facility and includes the modified impoundment facility, which will account for an additional c.10% of the total area of the TMF.

An additional Engineer Drawing 01, depicts in further details the extent of lands currently available for the permitted wetland and how the wetland can be accommodated following decommissioning of the existing conditioning ponds.

Once Phase 3 (capping of modified impoundment) is completed, all waters will pass through the on-site water treatment facility until such time as the permitted wetland system has been established and approved by NTCC, EPA and other relevant stakeholders (e.g. Inland Fisheries).

Condition 45 of the parent permission (PL22.100093) permits the mine operator to amend and/or alter the mine closure plan following a formal submission to the planning authority. The planning authority is then empowered to require changes to the proposed amendment/alterations.

- Water impact assessment

  A detailed water impact assessment (SWS Report) was submitted, which concluded that only Ammonium will exceed the respective surface water comparison values. It is important to note that the assessment is based on likely water quality without treatment. The report identifies that Ammonium is already elevated in both Rivers prior to any discharge from Lisheen.
- Findings of NIS

  The SWS report concludes that there will be no significant effects on water quality in terms of Relevant Quality Standards (EQSs) and as such no treatment is predicted to be necessary. However a precautionary approach is proposed and the NIS proposes that a wetland system be installed which would include for water chemistry treatment as well as water retention.
- Design of permitted wetland

  The location of the permitted wetland has been agreed and approved under the current CRAMP (as per Cond. 45 of the parent permission). Exact details of the final effluent quality will be required in order to fully design and construct the wetland, which would not be appropriate to submit at this stage. As the main TMF is being capped, further details in 2015/2016 will be available for the effluent quality. Once final effluent quality data is available for Phase 1, 2 and 3 of the TMF, the wetland will be designed, agreed with appropriate parties, constructed and commissioned. The existing water treatment facility will be kept operational until such time as the permitted wetland is fully operational. This is to safeguard the receiving waters. Condition 45 of the parent permission allowed flexibility in timing and design of wetland permitted and to allowed for further developments in passive mine water treatment to be incorporated into the final design once final effluent quality is being produced from the capped TMF.
- Existing wetlands on site

  The applicant/mine operator has worked closely with the EPA regarding continuous improvements of water treatment and discharges, and has recently installed a series of wetlands to reduce ammonia concentrations in the discharge.
- Lands available for permitted wetland

  Lisheen has extensive land holdings In the vicinity of the TMF which can be used for the development of the wetland. It is proposed to build the permitted wetland on land currently occupied by the conditioning ponds. Map submitted showing the lands available. As the mine goes into closure phase, the amount of water that needs to be treated will diminish considerably (10-20% current treatment needs). As such the requirement for the extent of conditioning ponds currently in place will no longer be necessary. Locating the wetland in this area is more sustainable.
- Geotechnical stability

  Details of embankment stability modelling were provided in Chapter 5 of the EIS. A stability analysis for the permitted water impoundment facility was carried out using commercially available limit-equilibrium slope stability software, SLOPE/W version 7.15.The analytical method used was the *Morgenstern and Price Method of Slices,* which satisfies both force and moment equilibrium. The stability analysis indicates that the Factor of Safety (FoS) for the dam walls is adequate under the modelled conditions. Details of model approach and results submitted. The FoS for the static and pseudo static cases are satisfactory. Because the dam wall is constructed of rockfill, then there is no detrimental effect on stability by failure of the lining. At screening stage for the NIS, it was considered that an assessment of the long term stability of the planned tailings cell was not necessary as part of the NIS as it was not likely to cause significant impact on the integrity of the Natura Site.

DoAHG (Archaeology)

Submission is welcomed and has no issues with conditions as suggested.

HSE (Health)

Submission is welcomed.

DCENR (Mining)

Submission is welcomed.

Internal Reports:

Environment Section: See attached Environment Section Report

Natura Impact Assessment Conclusion

Having regard to the Natura Impact Assessment, the Environment Section considers it reasonable to conclude that the proposed modification of the permitted water impoundment facility and proposed operations, individually and in combination with other plans or projects would not affect the integrity of the Lower River Suir SAC nor are significant impacts considered likely to occur on ecological features of the downstream sections of the Rivers Drish and Rossesstown; subject to implementation of the proposed mitigation measures, as per the above.

Environmental Impact Assessment Conclusion

Water

Taking account of the development proposals and mitigation measures as outlined in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed development is acceptable in terms of the potential impact on water.

Air

Taking account of monitoring results and mitigation proposals outlined in the EIS, the potential for adverse impact on the environment arising from the proposed development is considered as 'not significant'.

Noise

Taking account of the development proposals and mitigation measures as outlined in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed development is acceptable in terms of the potential to adversely impact on the noise environment at Noise Sensitive Receptors.

Soils & Geology

Taking account of the development proposals and mitigation measures as outlined in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed development is acceptable in terms of the potential to adversely impact on the soils & geology underlying the site of the proposed development.

Closure, Restoration & Aftercare

Provisions for the Closure, Restoration & Aftercare of the overall site has been outlined in the closure plan (CRAMP) which has been updated at various times so as to reflect the most recent legislation and mining practices. The most recent edition being published Jan, 2013. However, the proposed development while being very similar in engineering and geotechnical terms to the previous intended use i.e. water impoundment facility, is not included in this latest edition. The current EIS relates to this issue in that the consequences of implementing the modification proposals are outlined.

Basically, the EIS contends that as the proposed modification to the TMF cell extension (permitted water impoundment) does not represent any significant departure from either the impoundment scenario or the operation that which is currently being carried out with regard to the main TMF, then any potential impacts with regard to CRAMP, will be of the same or similar order.

There is of course one fundamental difference between the water impoundment scenario and the cell extension scenario and that is that the latter scenario facilitates a 12 months extension to mining operations

i.e. extended date: Spring 2015 whereby thereafter it is envisaged that rehabilitation of the cell extension (Phase 3) will take place.

Taking account of the development proposals in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed modified development will not have any adverse impact on progressive mine closure, the principles of which are outlined in the CRAMP document but which requires updating to reflect the current situation.

Conclusion re. EIS
Having considered elements of the EIS as per the above, the Environment Section is of the opinion that the main direct and indirect impacts on the environment of the proposed development have been identified and described. In the Environment Section view, potential impacts of the development can be adequately mitigated against and therefore, is not likely to result in any significant impact on the environment.

Planning Recommendations
This application relates to the modification (TMF Cell Extension) of the previously permitted, water impoundment facility and as such there is great similarity between both structures from an engineering and geotechnical perspective.
Taking relevant environmental issues into account as identified in the NIS & EIS, the proposed development does not appear to give rise to any issues of major concern, over and above that which have already been dealt with in previous associated applications and subsequent permissions. Accordingly, the Environment Section has no objection to the development going ahead, subject to the following condition:-

[1] The applicant shall implement in full the mitigation measures contained in the EIS & Natura Impact Statement submitted with the application save where any such mitigation measures relate to emissions to the environment falling within the scope of the Integrated Pollution Prevention and Control licence as per the remit of the Environmental Protection Agency.

[2] Prior to any works occurring on-site, the Closure, Restoration, Aftercare Management Plan (CRAMP) shall be updated so as to include for all aspects of the proposed development works, with a copy of the revised CRAMP being submitted to Planning for approval.

Environmental Impact Assessment:

1) Introduction

Brief overview of development
The permitted water impoundment facility proposed for modification is located adjoining the existing Tailings Management Facility (TMF). The structure is c. 9.0 hectare (ha.) in size and is accessed via internal haul roads within the Lisheen Mine footprint. It is proposed to place tailings in this structure over a c. 12 month period, and then to cap and restore this facility in a similar manner to the main TMF, which is currently being capped and restored.

Need for the development
Based on the most up to date estimates, it may be necessary to provide for an additional 12 months of storage for tailings in order to maximise the mine life. Based on this need, to facilitate progressive capping of the main TMF and also to minimise the footprint of the residual development following closure, the ideal solution for this contingency tailings storage is within the permitted water impoundment structure located adjoining the existing TMF. It is further noted that the design of the permitted water impoundment facility is identical in engineering terms to a structure required for the storage of tailings, and therefore suitable for modification activities, which are the subject of this planning application.

Summary of alternatives
The following alternatives were considered as part of this alternatives assessment:

- **Alternative A** - Construct a new tailings management facility (TMF) in an alternative location, and not make use of the permitted water impoundment structure to store tailings. Due to planning timelines and the potential

of seasonal restrictions, construction would not commence until spring 2014. The earliest this new TMF would be available for tailings storage would be approximately Autumn/Winter 2014. Additional capacity to store tailings at Lisheen is required in advance of this timeline;

- **Alternative B** – Do nothing scenario. If additional tailings capacity is not made available, this would result in the closure of the mine prematurely;
- **Alternative C** – Planning application for modification of the permitted water impoundment to store mine tailings. This would facilitate the additional capacity that Lisheen Mine requires for tailings storage, and within the appropriate timeline. This would also allow for the continued management of surface water (during operation) and through a permitted wetland feature (post closure) (Volume C of current CRAMP for Lisheen). This alternative also facilitates the progressive capping of the main TMF, as requested by the local community forum; and
- **Alternative D** – Raising the existing TMF from 136.5mOD to 137.5mOD over an area of approximately 40 ha. Following consultation with the local community, this alternative was considered to be unfavourable based on social grounds, as the local community were very much in favour of continued progressive restoration of the main TMF.

Each alternative was considered with regard to the principles of sustainability (Social, Environmental and Economic considerations). The proposed modification of the permitted water impoundment facility to store tailings (Alternative C) will facilitate progressive capping works on the main TMF by providing the additional tailings capacity required, and also allowing advanced capping activities to continue uninterrupted. Alternative C was found to be neutral in terms of environmental impact. The re-use of the permitted water impoundment facility to store tailings was also the most desirable from the economic viewpoint.

The EIS is made up of 13 no. chapters with tables within each chapter, and figures at the end of each chapter where relevant. The Non-Technical Summary appears as a separate document. Each of the 13 no. chapters of the EIS follows the same general format, as follows:

- An **Introduction** describing the purpose of the chapter;
- A description of the **Methodology** used in the chapter;
- A description of the aspects of the **Existing Environment** relevant to the environmental topic under consideration;
- An assessment of the **Impact** resulting from the proposed activities at the Application Site;
- Recommendations for **Mitigation** measures to avoid, reduce, and where possible remedy any significant negative impacts identified; and
- An assessment of the **Residual/Likely Significant Effects** which will remain assuming that the recommended mitigation measures are fully successfully implemented.

The EIS is structured under the following subject headings:
Chapter 1.0 Introduction;
Chapter 2.0 Project Description;
Chapter 3.0 Human Beings and Traffic;
Chapter 4.0 Flora and Fauna;
Chapter 5.0 Soils and Geology;
Chapter 6.0 Water;
Chapter 7.0 Climate;
Chapter 8.0 Air;
Chapter 9.0 Noise;
Chapter 10.0 Landscape;
Chapter 11.0 Material Assets: Archaeology and Utilities;
Chapter 12.0 Closure, Restoration and Aftercare; and
Chapter 13.0 Inter-relationships.

2) Likely Significant Direct and Indirect Impacts

i. Human Beings and Traffic

Assessment

The site is within Moyne Electoral Division at the border with County Kilkenny to the east. The neighbouring Electoral Division in Kilkenny is Baunmore. The nearest residential property to the site is located in Baunmore Electoral Division along the R502 approximately 650 m to the northeast. There are residential properties in the vicinity of the mine site, primarily concentrated in ribbon form development on the Cooleeny road where access is gained to the Mine Site as depicted in Figure 2.1 and Figure 2.2. These properties are located at a distance of 1,200 m to 1,700 m from the Application Site. The Application Site can only be accessed via private roads within the Mine Site.

With respect to social considerations, the modification of the permitted water impoundment facility will result in a positive social outcome, given that the mine will operate for an additional 12 months, which results in extended employment at the mine facility

The proposed development is to modify the use of a permitted water impoundment facility to store mine tailings. All tailings will be transported to the site via pipeline from the concentrator located in the main mine plant facility, using existing surface mine infrastructure. As such, no additional traffic will be generated during the operation phase. In addition, no additional traffic will result during management of surface water at the site. proposed modification activities will not give rise to any additional traffic movements during the operation phase. Ancillary traffic relating to closure activities will not impact the public road network. Therefore no impacts from traffic activities will occur.

Mitigation

The following activities are being undertaken by Lisheen Mine in the run up to closure (which is supported by this Application), to mitigate against such negative impacts of the overall facility closure:

- Discussions with industrial operators to re-use the plant footprint, surface infrastructure and workforce;
- Capping activities on the main TMF;
- Fisheries / hatchery operations; and
- Playing / leisure facilities post closure.

Residual / Likely Significant Effects

Approximately 400 employees will maintain employment for an additional 12 months, resulting in continued significant contributions to the public exchequer through tax and universal social payments. In addition, royalties of 3.5% of revenues will also be contributed to the Dept. of Communications, Energy and Natural Resources.

ii. Fauna and Flora

Assessment

There are eight designated sites within a 15 km radius of the Site, these include five EU Natura 2000 sites and eight nationally proposed Natural Heritage Areas. Cullahill Mountain SAC and Spahill / Clonmangagh Hill SAC are not considered further in this assessment as the designated features of semi natural grasslands are not impacted by Lisheen Mine. Galmoy Fen SAC and Loughlans SAC are also not considered further as although the fen and turlough are groundwater dependent terrestrial habitats, they do not lie within the Lisheen Groundwater Body. With regard to the remaining national designations, Kilcooley Abbey Lake pNHA, and Templemore Woods pNHA are not affected by Lisheen Mine and are not considered further.

Lisheen mine discharges to both the Rossestown River and Drish River and these rivers occur within 15 km upstream of the Lower River Suir SAC – an EU designated Natura 2000 site and also Cabragh Wetlands pNHA. Therefore, the Lower River Suir and Cabragh Wetlands pNHA, Rossestown River and the Drish River are included in the Ecological Impact Assessment. A Natura Impact Statement has also been prepared for the Lower River Suir SAC and accompanies the EIS.

The site itself is surrounded by cutover bog with some scrub and bog woodland. A large stockpile of peat and some highly disturbed amenity grassland occurs on the western edge of the site. The Lisheen Mine Tailings Management Facility (TMF) is to the east and hardstanding areas such as buildings, car parks and roads to the south. It is unlikely

that the proposed Site is used regularly by fauna given potential disturbance to the area from ongoing construction activities.

- Lower River Suir and Cabragh Wetlands pNHA

A Natura Impact Statement has also been prepared for the Lower River Suir SAC and accompanies the EIS.

- Rossestown River

Biological Monitoring of the Rossestown River has been carried out in April 2013, the EPA station upstream of the WWTP at the Bridge NW of Derryville was sampled and is Q3-4 which indicates *Moderate* Ecological Quality, with a siltation effect. The sample taken downstream of Lisheen discharge and Templetouhy WWTP is rated as Q3 which indicates *Poor* Ecological Quality.

- Drish River

Biological monitoring of the River Drish has been undertaken by the EPA and Lisheen Mine over the past 20 years. Site 1 and Stretch A are upstream of the discharge. Sites 2 and 3 and Stretch B are downstream of the discharge. In 2012, water quality of Q3-4 at Site 1 is seen to decline to Q3 at Site 2, with a toxic impact evident at Site 2 since 1999. In May 2013, a water quality of Q3 with no toxic effect is recorded at all Sites in the first round of 3 sampling rounds for the year.

Mitigation

The cumulative impact of water quality on habitats and species is considered of moderate negative significance, given the presence of important species. As the magnitude of the impact on these species is unknown and given the ecological status of both rivers is *Poor*, mitigation as a precautionary measure is therefore required to reduce the level of this potential impact.

The main mitigation measure to reduce the potential impacts on water quality, to no significance, is the provision of a wetland treatment system which will be agreed with Inland Fisheries, in terms of detailed design and implementation, once formal closure activities commence. The monitoring data from the current wetland treatment system can be used to design the wetland system for closure.

Disturbance during capping and closure to habitats and species of the TMF and surrounding area is considered Minor negative. An ecological survey and recommendations at the appropriate time will be needed to review and update any potential impacts during closure.

The proposed Biodiversity Action Plan (BAP) by Lisheen Mine (2009) provides details of opportunities to enhance biodiversity. An update of the proposed Lisheen BAP aimed at improving the riparian habitats and habitats of the Rossestown and Drish Rivers, where possible, at Lisheen would further protect the rivers.

Residual / Likely Significant Effects

It is considered in the water impact assessment, that the current water treatment processes in place at Lisheen are sufficient to treat the water discharge to surface water quality standards and salmonid standards with some exceptions. Given the effects of other parameters on EQS values, such as pH and DOC, it is the condition of the receiving waters and the Q values (with siltation or toxic effects) that are taken as the indicators of the potential cumulative impacts of Lisheen discharges and other diffuse/point discharges on ecological receptors.

Based upon the water impact assessment by Schlumberger Water Services (SWS) and once the wetland system is designed and implemented in consultation with Inland Fisheries, no significant impacts are considered likely on ecological features, in particular the Rossestown and Drish rivers and also the River Suir (SAC) and Cabragh wetlands (pNHA) downstream.

iii. Soils and Geology

Assessment

The proposed development has the potential to adversely impact on underground strata should the release of contaminated tailings occur. The most likely emission to the soils and geology environment is the potential for release

of contamination into the underlying subsurface, through the base or sides of the permitted impoundment facility, once storage of tailings commences. Other potential impacts include effects on the soils and geology environment during capping activities.

Mitigation
Growth media proposed for the final cap is reuse material, sourced from on-site peat and glacial till stockpiles resulting from previously permitted activities at the Lisheen Mine site;

- Construction materials for the rockfill cap upon closure will be sourced from an existing borrow source;
- Embankment stability modelling has been undertaken on the permitted water impoundment structure to ensure it will perform within satisfactory factors of safety, with the results being equally applicable for the storage of tailings; and
- The TMF will be returned to productive agricultural grassland or other use as agreed and adopted in the Closure, Restoration and Aftercare Management Plan (further details in Chapter 12.0).

In addition, the following mitigation measures have and will continue to be employed during the capping/restoration activities at the Application Site:

- All refuelling of mobile plant to be undertaken with care on designated fuelling areas;
- Any processing plant and/or mobile plant on the Site be regularly maintained, and where plant is damaged or leaking, this will be dealt with as part of on-going operational management of the Site;
- Maximise non-economic materials in restoration and closure activities;
- Lisheen Mine will ensure compliance with relevant safety and statutory legislation and best practices recommended by the EPA and other statutory bodies during the proposed placement of tailings and subsequent capping operations to mitigate any potential impacts on the soils and geology receiving environment; and
- All proposed modification activities will be undertaken in compliance with the IPPC Licence Ref. No. P0088-03, and extant planning permissions.

Residual / Likely Significant Effects
The magnitude of impacts have been determined with regard to various geological attributes and these vary from negligible to 'small adverse'. The 'small adverse' refers to geotechnical attributes of the proposed modified cell. In order to quantify such attributes i.e. structural stability analysis was carried out under several [conservative] worst-case scenarios. The results confirmed a satisfactory range of factor of safety i.e. FoS from 1.4 to 1.9.

In the long term, no adverse effects on the soils & geology underlying the site of the proposed development caused by the proposed modification activities on-site are expected, once the restoration and closure activities proposed are undertaken.

iv. Water

Assessment
The EIS identified two potential impacts on waters in relation to the proposed development:
(i) Impact on the flow and quality on surface waters i.e. Drish & Rossesstown Rivers.
In order to quantify such impacts, the Consultant (Refer to Schlumberger, July, 2013) carried out numerical/analytical modelling with regard to various [conservative] worst-case scenarios. In addition, all phases of the overall development were examined (Phases 1,2 & 3) in order to ensure identification of the cumulative impacts. The models were based on current monitoring data and 'hydro' data garnered over 20yrs experience at the Lisheen site.
Conclusions drawn are that the cell extension will virtually, make no difference to the overall mine discharge flow or chemistry with regard to the remaining period of mine operations or during the closure period.

(ii) Impact on quality of groundwaters and thereby, indirectly, on groundwater users.
A 3Dmodel (Modflow Software) was constructed to investigate the water balance variables of Phase 1 (trial cell) and Phase 2 (main TMF) and expanded to include the current development proposal: Phase 3 (TMF cell extension).
Conclusions drawn are that subject to the viability of the liner being maintained in the short-term, there will be no seepage and therefore no adverse impact on groundwater quality. Even if the liner were to fail, over the long-term, the worst case scenario(combined Phases) with regard to Sulphate (indicator) is that the concentration would range 120-

200mg/L which is below the Drinking Water Regs (250mg/L) and only in the upper range, would exceed the Groundwater Regs (188mg/L - SI 9 of 2010).

Only minor changes will be made to the operational management practices and the overall TMF water balance with use of the extension cell (i.e. modified water impoundment facility). The extension will retain an ancillary water storage function following the proposed modification of its primary use. The change in overall pumped water volume from the TMF to the process plant, or the amount of water requiring treatment, will be negligible.

Mitigation
The EIS recommends that the current mine water treatment is kept in place and working to capacity with respect to the current and future discharges from the cell extension facility. In addition and as a precautionary measure, additional treatment is recommended (post closure discharges) in order to enhance the water quality of the rivers by reducing potential adverse impacts to 'no significance'. In this regard, a wetland treatment system (designed in conjunction with Inland Fisheries) is proposed.

Residual / Likely Significant Effects
With regard to the proposed cell extension development, it must be remembered that the overall [current] status of the Drish & Rossesstown Rivers are classified as of 'poor' status as well as being of 'poor' ecological status.
The operation of the proposed extension will not materially affect the overall TMF water balance, either during the remaining period of mining operations, or during closure. Therefore, the extension will not change the current or future flow or water quality being discharged to either of the two rivers, or downstream in the River Suir catchment. The proposed development is acceptable in terms of the potential impact on water.

v. Climate

Assessment
The climate in the area of the Application Site is typical of the Irish climate, which is temperate maritime. The wind direction is predominantly from the south-west.

Emissions from vehicles during the closure phase can add to the receiving air environment. Little or no vehicle movements will be undertaken during the operational phase, as tailings will be transported to the application site via pipeline.

It is anticipated that the closure phase will have an expected duration of approximately four months. During this period rock material and growth media (soil and peat mix) will be placed on the tailings following the operational phase using construction vehicles and plant. CO2 is also emitted from such vehicle exhausts, which is a key gas linked to climate change.

Mitigation
No vehicles or plant will be left idling unnecessarily. Vehicles and plant will be well maintained. Should any emissions of dark smoke occur (except during start up) then the relevant machinery will be stopped immediately and any problem rectified before being used. Engines and exhaust systems will be regularly serviced according to the manufacturer's recommendations and maintained to meet statutory limits/opacity tests. All vehicles will hold a current Department of Environment certificate where required. Queuing or parking of vehicles outside the site, both during and before the site opens.

Growth media (peat and soil) will primarily be sourced from stockpiles adjoining the permitted water impoundment facility. Rockfill material will also be sourced locally to help reduce any associated carbon footprint.

Residual / Likely Significant Effects
The adoption of the proposed mitigation measures should ensure that the resulting impact significance is no greater than slight. Residual impacts of the proposed 'modification' activities on microclimate and climate change are considered to be imperceptible.

vi. Air

Assessment
2008-2012 monitoring data indicate that dust generally remained at or below the IPPC dust limit of 150mg/m2/d at the NSRs. In addition, the finer dust PM10 and metals monitoring generally indicated no exceedance outside of the Lisheen site.

Potential adverse impacts identified as arising from suspended particulates (PM10) and dust impacting on near sensitive receptors (NSR) i.e. residential Derrygreenagh area to the North-East. Emissions of particulates/dust from proposed closure/capping activities may potentially impact upon local air quality up to 1 km from source.

The potential for significant adverse impacts to local air quality as a result of emissions from construction activities is low due to the separation distance between the source and the nearest receptors. Consequently, impacts to local air quality are considered not significant.

Mitigation
Best practice in minimising atmospheric emissions will be adopted during the closure phase of the Proposed Development. Prior to commencement of capping works, a Construction Method Statement (CMS) will be completed. The CMS will identify the environmental management measures to be employed on site to control emissions of dust during the construction of the Proposed capping activities, and the following principles will be used in preparing the CMS:

- Minimise the creation of dust by planning and design;
- Minimise dust pickup by wind;
- Temporarily suspend activity or operation, where necessary;
- Layout and construct stockpiles, tips and mounds to minimise dust creation;
- Use of gentle slopes and avoid sharp changes of shape;
- Minimise the height of fall of material; and
- Rain sprays or static sprinklers will be used in periods of dry weather conditions.

Residual / Likely Significant Effects
The above mitigation measures will continue to be implemented on site during the closure/restoration stages. The overall impact from the proposed development, in terms of dust emissions, is considered to be not significant to the air environment. In the longer term, on completion of the closure/capping works, the concentration of airborne dust would expected to be reduced from present day levels as the result of covering and seeding exposed, un-vegetated soil surfaces. This will most likely constitute a minor positive impact for the local environment.

Taking account of monitoring results and mitigation proposals outlined [EIS], the potential for adverse impact on the environment arising from the proposed development is considered as 'not significant'.

vii. Noise

Assessment
As a result of the proposed development, additional noise sources will be introduced with the potential to adversely impact on near sensitive receptors (NSRs). Such receptors have been identified as residing in the Derrygreenagh area, some 660m NE of the cell extension.

Operational Phase - During the operations phase of the facility it is anticipated that the only noise sources operating will be a pump used to fill the new TMF. Occasionally it may be necessary to use additional plant to conduct maintenance works during the operations phase; however, it is considered that noise levels associated with such maintenance during this phase will be lower than during the capping/closure phase. BS 5228 provides a measured sound pressure level of 65 dB at 10 m for a 6-inch water pump, equating to a sound power level of 93 dB(A) at source.

Noise generated during the operational phase of this proposed development will be comparable to noise generated during the operation of the existing facility, so essentially there will be no 'additional' noise sources as a result of this proposed development.

Closure Phase – The new TMF will be capped with approximately 700 mm of Type B material as constructed on the existing TMF together with 300 mm of growing material. It is anticipated that noise levels arising from capping activities of the new TMF will exceed those occurring during the operations phase. However it is noted that these activities will be of short duration (c. 4 months).

The noise associated with this will be comparable to noise being produced by existing capping works which have been taking place, without issue or complaint, since 2008.

Mitigation
Noise mitigation measures will be incorporated into the Site design, management and working practices. Additional mitigation by good practice, as outlined in the BS 5228 guidance will also be adopted.

Measures to reduce potential noise impacts will include:

- All haul roads to be kept clean and maintained in a good state of repair, *i.e.* potholes to be filled and large bumps removed, to avoid unwanted rattle and "body-slap" from heavy goods vehicles;
- Heavy goods vehicles entering and leaving the site will have tailgates securely fastened; all mobile plant used at the proposed development will have noise emission levels that comply with relevant guidance;
- Plant will be operated in a proper manner with respect to minimising noise emissions, *e.g.* minimisation of drop heights, no unnecessary revving of engines, plant used intermittently not left idling;
- Plant will be subject to regular maintenance, *i.e.* all moving parts kept well lubricated, all cutting edges kept sharpened, the integrity of silencers and acoustic hoods maintained; and
- Plant will be fitted with effective exhaust silencers, and maintained in good working order to meet manufacturers' noise rating levels. Defective silencers will be replaced.

Existing baseline reports indicate that the noise limits are met during the operational phase i.e. 10dB below ambient levels at NSRs. Predictive analysis indicates that the closure operations will operate 2dB below the daytime limit. Overall, noise impact on NSRs considered as 'not significant'.

Residual / Likely Significant Effects
The proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence.

The mitigation measures outline above will continue to be implemented throughout the operation and closure phases. The overall noise impact as a result of the proposed modification activities will be not significant.

viii. Landscape

Assessment
The water impoundment facility is currently permitted under Planning Permission Ref. No. PLC17663 and ABP Ref. No. PL22.100093. Given that the structure is permitted, a Landscape and Visual Impact Assessment has been screened out of the Environmental Impact Assessment process.

Mitigation
Not applicable.

Residual / Likely Significant Effects
All tailings storage activities will be undertaken within the crest height of the permitted water impoundment facility (131.5 mOD). Therefore no residual landscape or visual impacts will occur as a result of the proposed modification development.

ix. Material Assets (Archaeology and Utilities)

Assessment
The water impoundment facility is currently permitted under Planning Permission Ref. No. PCL17663 and ABP ref. No. PL22.100093. Given that the structure is permitted, an archaeology Impact Assessment has been screened out of the Environmental Impact Assessment process.

Mitigation
Not applicable.

Residual / Likely Significant Effects
DAHG issued licences to commence preservation by record works at the permitted water impoundment facility. These preservation works commenced in June 201. A copy of the Archaeological Report on these excavations is to be forwarded to the Planning Authority once completed in accordance with Planning Permission Ref. No. PCL17663 and ABP ref. No. PL22.100093.

x. Closure, Restoration and Aftercare

Assessment
Provisions for the Closure, Restoration & Aftercare of the overall site has been outlined in the closure plan (CRAMP) which has been updated at various times so as to reflect the most recent legislation and mining practices in accordance with Planning Permission Ref. No. PCL17663 and ABP ref. No. PL22.100093. The most recent edition of the CRAMP was Jan, 2013.

Based on the current Life of Mine (LOM), mining operations are scheduled to cease by Spring 2015. Consequently, the discharge of tailings to the TMF will also cease at this time. Rehabilitation of the modified cell will be undertaken as Phase 3 of the overall closure works for the TMF facilities.

Mitigation
Phase 1 progressive rehabilitation of the existing TMF was completed in 2010. It is intended that continuation of this approach will be implemented during the coming years for Phase 2 (main TMF), and subsequently Phase 3 (Application Site).

The EIS contends that as the proposed modification to the TMF cell extension (permitted water impoundment) does not represent any significant departure from either the impoundment scenario or the operation that which is currently being carried out with regard to the main TMF, then any potential impacts with regard to CRAMP, will be of the same or similar order.

The proposed modification activities (Phase 3), which are the subject of this planning application, facilitate progressive restoration of the existing TMF facility (Phase 2), by providing the additional tailings capacity required, and also allowing advanced capping activities to continue uninterrupted. It should also be noted that surface water from the capped Phase 3 area will also be channelled towards the permitted artificial wetlands

Lisheen Mine currently has financial provisions on deposit in escrow accounts, under joint signatories of the various regulatory bodies. The amount of financial provision on deposit and the liability associated with closure is something that Lisheen reviews on a regular basis (generally on an annual basis) and communicates this with the appropriately regulators. Lisheen Mine will ensure that the closure funds in place are adequate to rehabilitate the entire TMF liability (including the proposed new tailings storage cell – c. 6 ha. final area for closure and restoration). This process will be carried out with regulators formally via the Mine Closure Committee.

The water level and quality of the groundwater in and beneath the dam wall of the new TMF cell will be monitored from the piezometers installed immediately above and below the base of the dam and the monitoring wells installed into the bedrock at the downstream dam toe. The proposed water level and water quality sampling will be undertaken in accordance with the IPPC Reg. No. P0088-03.

Residual / Likely Significant Effects
As the proposed modification activities will be undertaken during the remaining operational period at the mine, it is important that any implications for the current approved Lisheen CRAMP are identified.

There is provision for the closure plan (CRAMP) to be reviewed and updated at various times so as to reflect the most recent legislation and mining practices in accordance with Planning Permission Ref. No. PCL17663 and ABP ref. No. PL22.100093.

Taking account of the development proposals in the EIS and Planning Permission Ref. No. PCL17663 and ABP ref. No. PL22.100093, the proposed modified development, if permitted, will not have any adverse impact on progressive mine closure, the principles of which are outlined in the CRAMP document which will require review and may require updating to reflect the proposed modified development, if permitted.

xi. Inter-Relationships

Assessment

The EIS contains an assessment of the interactions/inter-relationships between all the above, including both operation and closure phases and found them to occur between the following:

- Human Beings and Air
- Human Beings and Noise
- Human Beings and Landscape
- Human Beings and Material Assests
- Human Beings and Closure
- Flora and Fauna and Air
- Soils and Geology & Air
- Soils and Geology & Closure
- Water and Closure
- Landscape and Closure

Mitigation

As per EIS submitted and described above under the various headings.

Residual / Likely Significant Effects

- Human Beings and Air

The potential for significant adverse impacts to local air quality as a result of emissions from tailings placement and subsequent capping activities is low, as the separation distance between the source and the nearest receptors is considered to be sufficient. Consequently, impacts to local air quality are considered not significant.

- Human Beings and Noise

The noise impact during the operational and capping/closure phases is therefore considered to be not significant.

- Human Beings and Landscape

The tailings material will not be visible above the crest of the permitted impoundment structure and there will be no additional visual effects arising at surrounding receptors as a result of the proposed modification activities.

- Human Beings and Material Assests

A wind turbine owned and operated by Bord Gáis Energy (BGE) is located in the vicinity. Mitigation measures were agreed by BGE and Lisheen Mine. It is expected that residual impacts due to the operational and closure phases of the project on Utilities in the vicinity of the cell will be slight to imperceptible.

- Human Beings and Closure

As a result of this proposed development and extension of Life of Mine, there will be a direct positive knock-on effect to the wider economy in the vicinity of Lisheen Mine. Employees will maintain employment for an additional 12 months, resulting in continued significant contributions to the public exchequer through tax and universal social payments. In addition, royalties of 3.5% of revenues will also be contributed to the Dept. of Communications, Energy and Natural Resources.

- Flora and Fauna and Air

The operation of the proposed extension will not materially affect the overall TMF water balance, either during the remaining period of mining operations, or during closure of the Lisheen mine facility. Therefore, the proposed modification activities will not change the current or future flow or water quality being discharged.

The main mitigation measure to reduce the potential impacts on water quality, to no significance, is the provision of a wetland treatment system which will be agreed with Inland Fisheries, in terms of detailed design and implementation, once formal closure activities commence. The monitoring data from the current wetland treatment system can be used to design the wetland system for closure.

- Soils and Geology & Air

The potential for significant adverse impacts to local air quality as a result of emissions from proposed capping/restoration activities is low due to the separation distance between the source and the nearest receptors, and based on previous mine operations at the site.

- Soils and Geology & Closure

The Construction Method Statement (CMS) will identify the environmental management measures to be employed on site to control emissions of dust during the proposed capping activities. In the longer term, on completion of the closure/capping works, the concentration of airborne dust would expected to be reduced from present day levels as the result of covering and seeding exposed, un-vegetated soil surfaces. This will most likely constitute a minor positive impact for the local environment.

- Water and Closure

Any post-closure mine discharge will lead to an increase in the assimilative capacity of the rivers. There will be no discharge during dry periods.

- Landscape and Closure

The tailings material will not be visible above the crest of the permitted impoundment structure and there will be no additional visual effects arising at surrounding receptors as a result of the proposed modification and activities.

Conclusion:

The Department of Arts, Heritage and the Gaeltacht observation submitted states "It is essential that an adequately sized wetland system is designed in sufficient detail to allow a full assessment of its efficacy, **before** the decision is made to approve the development. Not to do so represents an inadequate EIS. This is needed to avoid reasonable scientific doubt that an unspecified type of wetland is adequate to deal with long-term treatment of runoff water. In particular has sufficient land been set aside for an adequate wetland?"

Golder Associates on behalf of Lisheen Milling Ltd., submitted supplementary information regarding the location of the permitted wetland which has been agreed and approved under the current CRAMP (as per Cond. 45 of the parent permission (PLC/17663)). Exact details of the final effluent quality will be required in order to fully design and construct the wetland, which would not be appropriate to submit at this stage. As the main TMF is being capped, further details in 2015/2016 will be available for the effluent quality. Once final effluent quality data is available for Phase 1, 2 and 3 of the TMF, the wetland will be designed, agreed with appropriate parties, constructed and commissioned. The existing water treatment facility will be kept operational until such time as the permitted wetland is fully operational. This is to safeguard the receiving waters. Condition 45 of the parent permission allowed flexibility in timing and design of wetland permitted and to allowed ofr further developments in passive mine water treatment to be incorporated into the final design once final effluent quality is being produced from the capped TMF.

Bearing in mind the parent permission, it is considered that the EIS, and supplementary information submitted adequately identify and assess the potential impacts of the proposed development. The EIS and all submissions/observations received which are relevant to impacts on the environment have been considered, the site has been inspected, and an assessment carried out of the direct, indirect, and cumulative effects of the development on the environment. Having regard to the above, it is considered that the direct and indirect effects on the environment of the proposed development have been identified and described. It is considered that the potential impact of the

proposed development can be adequately mitigated and is not likely to result in a significant impact on the environment.

Habitat Directive Screening:

Appropriate Assessment:

i. Screening

This initial stage aims to identify the likely impacts of the project on a Natura 2000 site, either alone or in combination with other projects or plans. The impacts are examined to establish whether these impacts are likely to be significant. Assessment of the significance of effects is carried out in consultation with the relevant nature agencies.

ii. Natura Impact Statement

Consultants for the applicant have carried out a Stage 2, Appropriate Assessment of the development with regard to identifying Natura sites that could be adversely impacted upon with regard to infringement of their conservation objectives.

iii. Natura Sites

There are 5 number of Natura 2000 sites located within a 15km radius of the cell site. These are:- Galmoy Fen SAC 001858, Culahill Mountain SAC 000831, Spahill and Clonmantagh Hill SAC 000849, The Loughans SAC 000407 and the Lower River Suir SAC 002137. As the Lisheen mine discharges treated mine-water to both the Drish and the Rossesstown Rivers (tributaries of the Suir) and as the underlying groundwater body (Lisheen) encompasses only the cell site and the Lower River Suir SAC, then the remainder are discounted as not having any impact.

This SAC lies approx 13km downstream of the cell site and is designated as being of international importance. The conservation objectives relate to various water dependant habitats and species and as such the ecological importance of the river waters is of critical importance and by extension, the water quality of the SAC and upstream sections of the Drish and Rossesstown. It should be noted however, that the current position is that the overall status of both rivers are considered Poor while the Q rating for ecological status is also considered Poor. Possible adverse impacts to the SAC can arise therefore such as:-

Direct Impact: - Floating River vegetation.
- Designated aquatic species.
Indirect Impacts: - on other Annexed species i.e. Otter (affected by poisoned prey)
Incombination Impacts:- an indicator of such effects on the SAC can be taken as evidenced by the current Poor status of the rivers i.e. upstream of SAC and d/s of mine discharges.

iv. Cumulative Impacts

The main potential impact, from the proposed modificaiton of the permitted water impoundment facility, (in combination with the existing phases) relates to the impacts of discharges from Lisheen Mine on the water quality of the tributaries (Rossestown and Drish rivers) of the Suir and the potential downstream effect of these on the Lower River Suir SAC.

Potential direct and indirect impacts of the discharge are as follows:

- Direct effect on SAC *Floating River Vegetation* due to water quality, resulting in changes in the vegetation community of the river;
- Direct effect on SAC designated aquatic species such as fish, from potential water quality deterioration of the Rossestown and Drish rivers and of the River Suir; and
- Indirect effect on other Annexed species such as, Otter, their prey species have specific water quality requirements, and any decline in water quality in the river could potentially have significant indirect impact on their populations using the river.

The main pathways for the cumulative impact of water quality on ecological receptors are through; the water column, sediments and biota (through bioaccumulation/bioconcentration/biomagnification).

Water Quality Impacts

As highlighted in the Schiumberger Water Services water impact assessment, there is no significant impact on the water quality of the Drish and Rossestown or on the groundwater at the various stages of the mine closure, either alone or cumulatively. It is considered in the water impact assessment, that the current water treatment processes in place at Lisheen are sufficient to treat the water discharge to surface water quality standards and salmonid standards with some exceptions. Given the effects of other parameters on EQS values, such as pH and DOC (dissolved organic carbon), it is the condition of the receiving waters and the Q values (with siltation or toxic effects) that are taken as the indicators of the potential cumulative impacts of Lisheen discharges and other diffuse/point discharges on ecological receptors.

Given that the overall status of both receiving waters (rivers) is considered Poor and that the Q rating for ecological status is considered Poor, it would be important to ensure that sufficient mine water treatment is in place at all stages of the proposed development for current and future discharges.

In order to improve and protect ecological status downstream of Lisheen in both rivers, further treatment of the water discharging from Lisheen Mine is recommended as a precautionary measure. Lisheen Mine have put in place treatment systems for the discharge which have succeeded in reducing some of the water quality parameters, in particular for ammonia (70% reduction). This demonstrates that a wetland system can achieve improvements in water quality for some parameters. The monitoring data for the current treatment system can be used to determine the design of the wetland system proposed for post closure in accordance with Planning Permission Ref. No. PCL17663 and ABP ref. No. PL22.100093.

Mitigation Measures

The main measure is to reduce the moderately negative impact to that of 'no significiance' by retaining and treating the mine discharges in a wetland system, designed in consultation with Inland Fisheries and NPWS in accordance with Planning Permission Ref. No. PCL17663 and ABP ref. No. PL22.100093.

A secondary measure is to implement the Bio-diversity Plan (Lisheen Mine, 2009) i.e. improve riparian habitats etc.

v. Conclusion

It is considered that the Natura Impact Statement, and supplementary information submitted adequately identify and assess the potential impacts of the proposed development.

Having regard to the above assessment of the potential impacts in relation to the ecology on the Natura 2000 site – eg. Lower River Suir SAC, Site Code 002137, it is considered reasonable to conclude that the proposed modification of the permitted water impoundment facility and proposed operations, individually and in combination with other plans or projects would not affect the integrity of the Lower River Suir SAC having regard to its conservation objectives nor are significant impacts considered likely to occur on ecological features of the downstream sections of the Rivers Drish and Rossesstown; subject to implementation of the proposed mitigation measures, as per the above.

Planning Appraisal:

The current planning application is for modifications to the water impoundment facility granted planning permission under Planning Ref. No. PCL17633 and ABP ref. No. PL22.100093.

As per the submitted planning application with associated Environmental Impact Statement and Natura Impact Statement, it is difficult to predict the extent of tailings likely to be ultimately produced but current indications predict additional tailings storage is required above the storage capacity of the permitted TMF.

The proposed use of the permitted water impoundment facility for the storage of tailings may be necessary

- to provide for an additional 12 months of storage for tailings in order to maximise the mine life.
- to facilitate progressive capping of the main TMF and
- to minimise the footprint of the residual development following closure.

It is stated that the design of the permitted water impoundment facility is identical in engineering terms to a structure required for the storage of tailings, and therefore suitable for the modification activities proposed.

Under Planning Ref. No. PCL17633 and ABP ref. No. PL22.100093, extensive archaeological assessment and excavation is currently ongoing in the area of the impoundment facility. Chapter 11 of the EIS makes reference to detailed archaeological impact assessment reports prepared by Irish Archaeology Consultancy, under licence reference number 13E059 under the National Monuments Acts 1930-1994, (reports dated April 2013 and May 2013). A detailed programme of archaeological excavation within the development area commenced during the summer of 2013 and is currently ongoing.

Closure plan and subsequent modifications and alterations is covered by Condition 45 of Planning Ref. No. PCL17633 and ABP ref. No. PL22.100093, granted to Lisheen in May 1997. The post closure plan can be updated to include the potential impacts from the proposed use of the permitted water impoundment facility for the storage of tailings. No variation to the current sureties is required for the closure.

An update of the proposed Lisheen Biodiversity Action Plan aimed at improving the riparian habitats and habitats of the Rossestown and Drish Rivers, where possible, at Lisheen would further protect the rivers and should be carried out and submitted to the Planning Authority.

The Construction Method Statement (CMS) will identify the environmental management measures to be employed on site to control emissions of dust during the proposed capping activities.

The developer shall implement in full the mitigation measures contained in the Environmental Impact Statement & Natura Impact Statement submitted with the application save where any such mitigation measures relate to emissions to the environment falling within the scope of the Integrated Pollution Prevention and Control licence as per the remit of the Environmental Protection Agency.

No development contributions are applicable.

Bearing in mind the design of the proposed development, the planning history on the site and the relevant policies of the County Development Plan 2010; and the nature and extent of the proposed use and of development in the vicinity; it is considered that, subject to compliance with the conditions set out in the attached Schedule, the proposed development would not seriously injure the amenities of the area or of property in the vicinity; would not be prejudicial to public health; would be acceptable in terms of traffic safety and convenience and would, therefore, be in accordance with the proper planning and sustainable development of the area.

Recommendation:
Having considered the above application and supporting documentation it is recommended that permission be **granted** subject to the following schedule of conditions.

NORTH TIPPERARY COUNTY COUNCIL
PLANNING & DEVELOPMENT ACT 2000

Schedules of Conditions & Reasons– File Reference Number: 13/51/0275

SCHEDULE A

Having regard to the design of the proposed development, the planning history on the site and the relevant policies of the County Development Plan 2010; and the nature and extent of the proposed use and of development in the vicinity; it is considered that, subject to compliance with the conditions set out in the attached Schedule, the proposed development would not seriously injure the amenities of the area or of property in the vicinity; would not be

prejudicial to public health; would be acceptable in terms of traffic safety and convenience and would, therefore, be in accordance with the proper planning and sustainable development of the area.

SCHEDULE B

1. The development shall be carried out in accordance with the plans and particulars lodged with the application received by the planning authority on the 8th August, 2013, except as may otherwise be required in order to comply with the following conditions.
Reason: To clarify the terms of the permission.

2. The proposed development shall be carried out in accordance with the conditions attached to the permission granted under planning register number PLC/17,663 (PL22.100093) on the 30th May, 1997, except as amended to conform with the provisions indicated in the plans lodged in connection with this application and with the following conditions.
Reason: To ensure consistency with the development as previously granted.

3. (i) The applicant shall retain the services of a suitably qualified archaeologist to carry out all required archaeological assessment, excavation and monitoring (licensed under the National Monuments Acts 1930-1994) in the area of the proposed development. The archaeological assessment and excavations shall be completed on site in advance of commencement of use and in full agreement with the National Monuments Service, Department of Arts, Heritage & the Gaeltacht.
(ii) All ground disturbance associated with the development, including services runs, drainage, etc., shall be monitored by a suitably qualified archaeologist and licensed under the National Monuments Acts 1930-1994. Full provision shall be made for the resolution of any archaeological features/deposits that may be discovered. The developer shall be prepared to be advised by the Department of Arts, Heritage & the Gaeltacht with regard to any necessary mitigating action (e.g. preservation *in situ,* and/or excavation). The applicant shall facilitate the archaeologist in recording any material found during monitoring works.
(iii) An archaeological publication describing the results of the archaeological excavations and monitoring shall be prepared and submitted to the relevant authorities following the completion of all archaeological work on site. The publication shall include all necessary specialist post-excavation reports, including a palaeo-environmental study. The postexcavation programme shall be agreed in advance with the National Monuments Service, Department of Arts, Heritage & the Gaeltacht.
(iv) The applicant is required to engage the services of a suitably qualified archaeologist in advance of the mine closure phase of the project to ensure that any required modifications to design details and associated groundworks, following completion of use of the impoundment facility, are archaeologically assessed and any necessary mitigatory measures put in place to ensure the preservation and/or recording of archaeological material/features affected by any such modifications. Any potential hydrological impacts on the archaeological material/features preserved in-situ in the area shall be assessed and appropriate mitigatory measures, including monitoring facilities, shall be put in place in advance of the mine closure.
Reason: In the interest of archaeological heritage.

4 The developer shall implement in full the mitigation measures contained in the Environmental Impact Statement & Natura Impact Statement submitted with the application save where any such mitigation measures relate to emissions to the environment falling within the scope of the Integrated Pollution Prevention and Control licence as per the remit of the Environmental Protection Agency.
Reason: In the interest of orderly development and to ensure the satisfactory rehabilitation of the site.

5 The Closure, Restoration, Aftercare Management Plan (CRAMP) shall be reviewed and updated, if required, so as to include for all aspects of the development works, with a copy of the review and revised CRAMP, if required, being submitted to the Planning Authority for written agreement.
Reason: In the interest of orderly development, proper planning and sustainable development.

6 The Construction Method Statement (CMS) identifying the environmental management measures to be employed on site to control emissions of dust during the proposed capping activities shall be carried out and submitted to the Planning Authority prior to commencement of this work.

Reason: In the interest of orderly development, proper planning and sustainable development.

Executive Planner: M Ryan **Date:** 26/9/13

M. Ryan

Senior Executive Planner: N O'Connell **Date:** 30/9/13

N. O'Connell

DECISION MAKER'S WRITTEN STATEMENT ON EIA

It is noted that the Environmental Impact Assessment carried out by the *Senior Executive Planner* and reported on in the report dated 30/9/13 has been carried out giving full consideration to the Environmental Impact Statement submitted with the application, all submissions and observations validly made in relation to the environmental effects of the development.

It is considered that the report dated 30/9/13 (generally) contains a fair and reasonable assessment of the likely significant effects of the development on the environment. The assessment as reported is adopted as the assessment of North Tipperary County Council.

It is considered that the development complies with the policies and objectives of the County Development Plan 2010 and that the development ~~does not have an adverse impact upon the character of the area or the amenities of adjoining properties.~~ would not have an adverse environmental impact on the area

Director of Service: **Date:** 2/10/13

M. Shortt

MEMO
ENVIRONMENT SECTION

Comhairle Contae Thiobraid Árann Thuaidh
North Tipperary County Council

To: Michael Woulfe, Senior Executive Engineer - Environment
From: Fergus O'Connor, Executive Engineer - Environment
Re: **13510275 –9ha TMF Lisheen Cell Extension at Killoran, Thurles.**
Date: 23rd Sep, 2013

With regard to the proposed development, I wish to report as follows:

Natura Impact Statement

Consultants for the applicant have carried out a Stage 2, Appropriate Assessment of the development with regard to identifying Natura sites that could be adversely impacted upon with regard to infringement of their conservation objectives.

There are 5 number of Natura 2000 sites located within a 15km radius of the cell site. These are:- Galmoy Fen SAC 001858, Culahill Mountain SAC 000831, Spahill and Clonmantagh Hill SAC 000849, The Loughans SAC 000407 and the Lower River Suir SAC 002137. As the Lisheen mine discharges treated mine-water to both the Drish and the Rossesstown Rivers (tributaries of the Suir) and as the underlying groundwater body (Lisheen) encompasses only the cell site and the Lr Rv Suir SAC, then the remainder are discounted as not having any impact.

Lr Rv Suir SAC

This SAC lies approx 13km downstream of the cell site and is designated as being of international importance. The conservation objectives relate to various water dependant habitats and species and as such the ecological importance of the river waters is of critical importance and by extension, the water quality of the SAC and upstream sections of the Drish and Rossesstown. It should be noted however, that the current position is that the overall status of both rivers are considered Poor while the Q rating for ecological status is also considered Poor. Possible adverse impacts to the SAC can arise therefore such as:-

Direct Impact: - Floating River vegetation.
- Designated aquatic species.
Indirect Impacts: - on other Annexed species i.e. Otter (affected by poisoned prey)
Incombination Impacts:- an indicator of such effects on the SAC can be taken as evidenced by the current Poor status of the rivers i.e. upstream of SAC and d/s of mine discharges.

In order to assess such impacts the EIS relies on a combination of Q values and water column EQS (refer to Schoumberger Impact Assessment).

Water Quality Impacts

As highlighted in the Schiumberger Water Services water impact assessment, there is no significant impact on the water quality of the Drish and Rossestown or on the groundwater at the various stages of the mine closure, either alone or cumulatively. It is considered in the water impact assessment, that the current water treatment processes in place at Lisheen are sufficient to treat the water discharge to surface water quality standards and salmonid standards with some exceptions. Given the effects of other parameters on EQS values, such as pH and DOC (dissolved organic carbon), it is the condition of the receiving waters and the Q values (with siltation or toxic effects) that are taken as the indicators of the potential cumulative impacts of Lisheen discharges and other diffuse/point discharges on ecological receptors.

Given that the overall status of both receiving waters (rivers) is considered Poor and that the Q rating for ecological status is considered Poor, it would be important to ensure that sufficient mine water treatment is in place at all stages of the proposed development for current and future discharges.

In order to improve and protect ecological status downstream of Lisheen in both rivers, further treatment of the water discharging from Lisheen Mine is recommended as a precautionary measure. Lisheen Mine have put in place treatment systems for the discharge which have succeeded in reducing some of the water quality parameters, in particular for ammonia (70% reduction). This demonstrates that a wetland system can achieve improvements in water quality for some parameters. The monitoring data for the current treatment system can be used to determine the design of the wetland system proposed for post closure. Direct and Indirect impacts on the Lr Rv Suir SAC that may be caused by the proposed works are listed in Table 6 (EIS) and which can be summarised as having a moderately negative significance (of unquantified magnitude) over any of the Phases i.e. Operational, Active Mine Closure or Longterm Post-Closure with respect to adverse water quality vis a vis conservation objectives of the SAC.

Mitigation Measures

The main measure is to reduce the moderately negative impact to that of 'no significiance' by retaining and treating the mine discharges in a wetland system, designed in consultation with Inland Fisheries and NPWS.

A secondary measure is to implement the Bio-diversity Plan (Lisheen Mine, 2009) i.e. improve riparian habitats etc.

Conclusion re. Natura

Having regard to the above assessment, I consider it reasonable to conclude that the proposed modification of the permitted water impoundment facility and proposed operations, individually and in combination with other plans or projects would not affect the integrity of the Lr Rv Suir SAC nor are significant impacts considered likely to occur on

ecological features of the downstream sections of the Rivers Drish and Rossesstown; subject to implementation of the proposed mitigation measures, as per the above.

Environmental Impact Assessment

Water

The EIS identified two potential impacts on waters in relation to the proposed development i.e.
(i) - Impact on the flow and quality on surfacewaters i.e. Drish & Rossesstown Rivers.
(ii)- Impact on quality of groundwaters and thereby, indirectly, on gw users.

SW

In order to quantify such impacts, the Consultant (Refer to Schlumberger, July, 2013) carried out numerical/analytical modelling with regard to various [conservative] worst-case scenarios. In addition, all phases of the overall development were examined (Phases 1,2 & 3) in order to ensure identification of the cumulative impacts. The models were based on current monitoring data and 'hydro' data garnered over 20yrs experience at the Lisheen site.
Conclusions drawn are that the cell extension will virtually, make no difference to the overall mine discharge flow or chemistry with regard to the remaining period of mine operations or during the closure period.

GW

A 3Dmodel (Modflow Software) was constructed to investigate the water balance variables of Phase 1 (trial cell) and Phase 2 (main tmf) and expanded to include the current development proposal: Phase 3 (TMF cell extension). A worst-case scenario involving a defunct liner and seepage rate controlled by consolidation of the deposited tailings (vertical hydraulic conductivity decreasing over time), was adopted. Sulphate (SO_4), was used as the impact indicator due to it being a conservative pollutant and not readily attenuated by organic matter.
Conclusions drawn are that subject to the viability of the liner being maintained in the short-term, there will be no seepage and therefore no adverse impact on groundwater quality. Even if the liner were to fail, over the long-term, the worst case scenario(combined Phases) with regard to Sulphate (indicator) is that the concentration would range 120-200mg/L which is below the Drinking Water Regs (250mg/L) and only in the upper range, would exceed the Groundwater Regs (188mg/L - SI 9 of 2010).

Conclusion

With regard to the proposed cell extension development, it must be remembered that the overall [current] status of the Drish & Rossesstown Rivers are classified as of 'poor' status as well as being of 'poor' ecological status. As such, the EIS recommends that the current mine water treatment is kept in place and working to capacity with respect to the current and future discharges from the cell extension facility. In addition and as a precautionary measure, additional treatment is recommended (post closure discharges) in order to enhance the water quality of the rivers by reducing potential adverse impacts to 'no significance'. In this regard, a wetland treatment system (designed in conjunction with Inland Fisheries) is proposed.
Taking account of the development proposals and mitigation measures as outlined in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed development is acceptable in terms of the potential impact on water.

Air

Potential adverse impacts identified as arising from suspended particulates (PM10) and dust impacting on near sensitive receptors (NSR) i.e. residential Derrygreenagh area to the North-East. 2008-2012 monitoring data indicate that dust generally remained at or below the IPPC dust limit of 150mg/m2/d at the NSRs. In addition, the finer dust PM10 and metals monitoring generally indicated no exceedance outside of the Lisheen site. The relevant concentrations have been appraised against the [recent] EU directive: Ambient Air Quality & Cleaner Air for Europe (CAFE) as transposed into Air Quality Standards Regs 2011. Based on such findings the EIS considers that potential impact is of 'low significance' as the separation distance (660m) is considered sufficient.

Conclusion

Taking account of monitoring results and mitigation proposals outlined [EIS], the potential for adverse impact on the environment arising from the proposed development is considered as 'not significant'.

Noise

As a result of the proposed development, additional noise sources will be introduced with the potential to adversely impact on near sensitive receptors (NSRs). Such receptors have been identified as residing in the Derrygreenagh area, some 660m NE of the cell extension.
Noise can be expected to be generated at the (i) Operational phase i.e. deposition of tailings over a 12 month period; (ii) Closure phase i.e. capping of cell with 700mm rockfill and 300mm organic material, over a 4 month period; reclaim water pump operating intermittently day and night. IPPC licence limits are set at 45/55dBaL_{aeq} (night/day). Existing baseline reports indicate that the noise limits are met during the operational phase i.e. 10dB below ambient levels at NSRs. Predictive analysis indicates that the closure operations will operate 2dB below the daytime limit. Overall, noise impact on NSRs considered as 'not significant'.

Conclusion

Taking account of the development proposals and mitigation measures as outlined in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed development is acceptable in terms of the potential to adversely impact on the noise environment at NSRs.

Soils & Geology
The proposed development has the potential to adversely impact on underground strata should the release of contaminated tailings occur. The site is underlain with glacial till of varying depth i.e. 0.5 to 3m. The magnitude of impacts have been determined with regard to various geological attributes and these vary from negligible to 'small adverse'. The 'small adverse' refers to geotechnical attributes of the proposed modified cell. In order to quantify such attributes i.e. structural stability analysis was carried out under several [conservative] worst-case scenarios. The results confirmed a satisfactory range of factor of safety i.e. FoS from 1.4 to 1.9.

Conclusion

Taking account of the development proposals and mitigation measures as outlined in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed development is acceptable in terms of the potential to adversely impact on the soils & geology underlying the site of the proposed development.

Closure, Restoration & Aftercare
Provisions for the Closure, Restoration & Aftercare of the overall site has been outlined in the closure plan (CRAMP) which has been updated at various times so as to reflect the most recent legislation and mining practices. The most recent edition being published Jan, 2013. However, the latest proposed development while being very similar in engineering and geotechnical terms to the previous intended use i.e. water impoundment facility, is not included in this latest edition. The current EIS relates to this issue in that the consequences of implementing the modification proposals are outlined.
Basically, the EIS contends that as the proposed modification to the TMF cell extension (permitted water impoundment) does not represent any significant departure from either the impoundment scenario or the operation that which is currently being carried out with regard to the main TMF, then any potential impacts with regard to CRAMP, will be of the same or similar order.
There is of course one fundamental difference between the water impoundment scenario and the cell extension scenario and that is that the latter scenario facilitates a 12 months extension to mining operations i.e. extended date: Spring 2015 whereby thereafter it is envisaged that rehabilitation of the cell extension (Phase 3) will take place. It should be noted that with regard to funding of the CRAMP that there is currently an excess in the account due to the fact that ongoing rehabilitation projects have been funded out of operational costs.

Conclusion

Taking account of the development proposals in the EIS and to the fact that the proposed cell extension and general mining operations are controlled under an EPA: IPPC, licence, indicates that the proposed modified development will not have any adverse impact on progressive mine closure, the principles of which are outlined in the CRAMP document but which requires updating to reflect the current situation.

Conclusion re. EIS
Having considered elements of the EIS as per the above, I am of the opinion that the main direct and indirect impacts on the environment of the proposed development have been identified and described. In my view, potential impacts of the development can be adequately mitigated against and therefore, is not likely to result in any significant impact on the environment.

Planning Recommendations

This application relates to the modification (TMF Cell Extension) of the previously permitted, water impoundment facility and as such there is great similarity between both structures from an engineering and geotechnical perspective. Taking relevant environmental issues into account as identified in the Natura Impact Statement & EIS, the proposed development does not appear to give rise to any issues of major concern, over and above that which have already been dealt with in previous associated applications and subsequent permissions. Accordingly, I have no objection to the development going ahead, subject to the following condition:-

[1] The applicant shall implement in full the mitigation measures contained in the EIS & Natura Impact Statement submitted with the application save where any such mitigation measures relate to emissions to the environment falling within the scope of the Integrated Pollution Prevention and Control licence as per the remit of the Environmental Protection Agency.

[2] Prior to any works occurring on-site, the Closure, Restoration, Aftercare Management Plan (CRAMP) shall be updated so as to include for all aspects of the proposed development works, with a copy of the revised CRAMP being submitted to Planning for approval.

24/9/2013

Signed;

Fergus O'Connor
Executive Engineer
foc/ak/cb

SEE