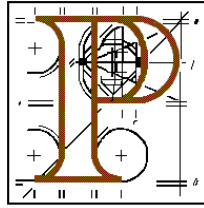


# An Bord Pleanála



## Inspector's Report

**Development:** Rock quarry at Balcarrighill, Ballycanew, Co. Wexford.

### Application for Substitute Consent under Section 177E

Planning Authority : Wexford County Council  
Owner/Operator : Redrock Developments Ltd.

### Review under Section 261A

: Yes – Ref. 26.QV0243

### Parties

#### Observers

: S J Teahan & John Teahan  
: Michael & Anne Tighe  
: Seamus, Maria & David Hobbs  
: E. Reilly

#### Date of site inspection

: 25<sup>th</sup> August 2014

Inspector: **Michael Dillon**

## 1.0 SECTION 261A

- 1.1 On 23<sup>rd</sup> August 2012, Wexford County Council determined that a remedial Environmental Impact Statement (rEIS) was required in relation to this quarry (ref. Q046). The site had been visited in 2011 and 2012 on foot of inspection for a planning application and for enforcement investigation. The determination/decision of the Council in relation to Section 261A was referred to the Board for Review.
- 1.2 The request for review (ref. **26.QV0243**) was made by the quarry owner/occupier, on 12<sup>th</sup> September 2012. The site was inspected by the Board's Inspector on 22<sup>nd</sup> April 2013, and photographs taken. By Order dated 25<sup>th</sup> October 2013, the Board confirmed the determination/decision of Wexford County Council – requiring the quarry owner/operator to submit an application for substitute consent, accompanied by an rEIS.
- 1.3 The Board granted an extension of time for the making of an application for substitute consent.
- 1.4 The quarry was not registered under Section 261 of the Act, as permission was granted less than 5 years before the enactment of section 261 – ref. 2003/1365 (**PL 26.203600**). The requirements of section 261 were deemed to have been fulfilled by reference to section 261(11) of the Act.

## 2.0 PLANNING HISTORY

The planning history of this overall quarry site, insofar as it can be ascertained from documentation submitted to the Board, is as follows-

- 2.1 There are enforcement records dating back to 2000 relating to unauthorised quarrying activity at the site. An enforcement notice was issued by Wexford County Council to Ralph Gahan, Billy O'Leary and Redrock Developments on 3<sup>rd</sup> April 2003, ordering the cessation of the quarry use and rehabilitation of the site.
- 2.2.1 **Ref. 2003/1365:** A planning application was lodged by Redrock Developments Ltd. on 28<sup>th</sup> April 2003, subsequent to an enforcement notice. The stated site area, including access road, was 3.875 ha. The application provided for intensification of use and a new vehicular access. It was proposed to extract in an easterly direction to a depth of 55.91m above Ordinance Datum (OD). The development involved blasting. There was no proposal to excavate below the water table. There was no Environmental Impact Statement (EIS) submitted the application. The planning authority refused permission for three reasons, summarised below-

- Development being contrary to rural amenities and character, due to visual obtrusiveness, noise and traffic that would contravene section 4.6 of the Development Plan;
- Development would be injurious to amenities of residential properties in vicinity, due to noise disturbance and traffic congestion;
- Development would be injurious to amenities and depreciate the value of properties in the vicinity.

2.2.2 The refusal of the Council was appealed to the Board by the applicant (**ref. PL 26.203600**). An hydrogeological report and revised layout and levels were submitted in response to a section 132 request by the Board. The Board granted permission for the revised proposal on 17<sup>th</sup> February 2004, to expire 10 years after the date of grant of permission. The Board gave the following reason for granting permission:

*Having regard to the location of the site in a normal landscape as defined in the Wexford County Development Plan 2001, to the limited scale of the quarry, to the distance of the area of extraction from residential properties in the vicinity, to the history of quarrying on this land and to proposals to relocate the access road to the site, it is considered that the proposed development, subject to compliance with the conditions set out below, would not be detrimental to the visual and residential amenities of the area and would not result in a traffic hazard. The proposed development would be in accordance with the policy for extractive industries as outlined in section 6.4 of the current development plan for the area and would, therefore, be in accordance with the proper planning and sustainable development of the area.*

2.3 The planning authority carried out further enforcement action relating to non-compliance with the Board decision. A warning letter was issued on 27<sup>th</sup> August 2009, in relation to possible non-compliance with condition no. 6 of PL 26.203600 (dust control measures). A second warning letter was issued to Billy O'Leary and Redrock Developments on 12<sup>th</sup> February 2010, in relation to possible non-compliance with conditions no. 2, 4, 5, 6, 9 & 11. An enforcement notice was served on Lorraine O'Leary, Joseph O'Leary, Billy O'Leary and Redrock Developments on 2<sup>nd</sup> March 2011, relating to non-compliance with several conditions of PL 26.203600. Judicial review of the enforcement notice was sought from the High Court. The planning authority withdrew the enforcement notice on 22<sup>nd</sup> June 2011.

2.4 **Ref. 2011/0898:** Belcarrig Quarries Ltd. sought permission for, concrete batching plant and ancillary works within the boundaries of existing permitted stone quarry ref. 2003/1365 (PL 26.203600) (amended under significant further information) including covered aggregate storage bays together with additional screening mounding and planting, truck wheel

wash, improvements to existing access road and surface water drainage. Retention permission sought for existing portable office building (41.22sq.m), portable chemical toilet, storage container, car-parking area and weighbridge.

The planning authority refused permission on 26<sup>th</sup> June 2012, for the following reason:

*It has not been demonstrated that the proposed development would not cause further serious water pollution having regard to:*

- *The industrial type nature of the proposed development, which has the potential to generate significant volumes of polluted waste water from cleaning, etc., and which would require significant further extraction at the site;*
- *The information submitted regarding significant existing ground water pollution at and around the site;*

*As such the proposed development would be prejudicial to public health and contrary to the proper planning and sustainable development of the area.*

- 2.5 **Ref. WP05-26:** Refers to Waste Permit granted for importation of material to form bunds around the quarry pit.

### **3.0 APPLICATION FOR SUBSTITUTE CONSENT**

- 3.1 An application for substitute consent was made on 25<sup>th</sup> April 2014, by PD Lane Associates, agent on behalf of the quarry operator, Redrock Developments Ltd. The operator is not the owner of the land – it being in the possession of Raphael Gahan, Belcarrig. The application was accompanied by an rEIS. The site area was stated to be 5.2416ha. Water supply is stated to be from a private well. There is a chemical toilet only on the site. Surface water percolates to ground and is circulated through settlement lagoons for processing purposes. The application provides for a new wheel-wash, removal of certain storage containers, surfacing of parts of the access road and other ancillary drainage and fencing works. The application form states that the ‘extraction of stone outside the previously permitted boundaries of the stone quarry and below the previously permitted level of the stone quarry took place mainly during the period 2010-2012.
- 3.2 By letter dated 2<sup>nd</sup> May 2014, the Board requested the applicant to submit additional drawings relating to land in the ownership/control of the applicant, and the omission of the proposed wheel-wash. The response submission of 9<sup>th</sup> May 2014 includes map to scale 1:2500 showing the area of the quarry site, outlined in red and blue, being cotermious.

- 3.3 An updated CD of the application was received by the Board on 21<sup>st</sup> May 2014 – following a request from the Board for such to be submitted.

#### **4.0 SITE LOCATION AND DESCRIPTION**

- 4.1 The quarry is located in the townland of Belcarrighill – some 3km to the southwest of the village of Ballycanew in Co. Wexford. The area is agricultural, with a significant scattering of one-off housing on county roads. The quarry is situated at the summit of a locally prominent hill (160m), and surrounded on all sides by agricultural land and some gorse scrubland. Owing to the elevated nature of the site, the quarry berms are visible from a wide distance surrounding – particularly when approaching along the ridge access road to the west of the quarry. The earth berms effectively screen the quarry from view from roads in the vicinity. Only from higher ground to the west-southwest is it possible to see part of the interior of the quarry. A site notice was erected at the quarry entrance on the date of site inspection by this Inspector.
- 4.2 Access to the quarry is from a county road to the south. The 80kph speed restriction applies in this area. There are no public footpaths and there is no public lighting. The road has a good surface, and it is possible to pass two vehicles at the quarry entrance. There are warning signs at the approach to the quarry entrance. The access to the quarry is formed by a wide recessed entrance – access being controlled by a set of farm gates. Sight distance is good in either direction – the roadside boundary hedgerow to the west of the entrance having been removed. There is no signage erected at the quarry entrance. There is no housing directly at the entrance – but there is a cluster of houses just to the east. There is a second access to the quarry from a narrow county road to the west. This was the original access to the older quarry on this site, prior to the construction of the new principal access under permission ref. 2003/1365. This secondary access now serves flanking agricultural land only, and there was no indication that it had been used recently for quarry purposes. There is a row of three bungalows immediately to the south of the original quarry access – situated on the same side of the road, and a fourth older two-storey house at the junction (on the opposite side of the road). There is a bungalow/electrical contractor premises located on the access road immediately to the south of the quarry. There are some scattered houses located along the road to the northwest of the quarry. There are a considerable number of houses along the access road to the quarry – owing to its location running along the ridge of a set of hills and the fine views afforded either side.
- 4.3 From the principal entrance, a 200m long access road climbs gently away from the public road towards the quarry void to the northwest. This access road is approximately 8.0m wide. It is fenced and fitted with dust

suppression sprinklers. The tarmac surface of the road is badly broken-up, particularly at the entrance end. There is a cluster of 2 'Portacabin' office buildings, a dilapidated mobile home, 2 no. metal shipping containers, a broken-down truck (used for storage) and weigh-bridge at the end of the 200m access road. There is car-parking at the office area. There is no wheel-wash serving this quarry. Mobile and fixed crushing, screening, and washing plant is located on the quarry floor. There is a diesel generator and oil tank powering the principal washing plant. Water for the washing plant is extracted from the quarry sump using an electrically-powered pump. There was no evidence of any recent dewatering of the quarry. The generator and oil tank are unbunded, and oil has leaked into the ground beneath them. There is a further disused large 'Portacabin' perched above the quarry void on the northwestern side. Some plant is fitted with floodlighting. Stockpiles of aggregate are located on the quarry floor. Quarry waste (tyres, piping, broken machinery/plant) are stored at various locations about the quarry. The quarry floor is at or above 144m OD. There is a large pond on the quarry floor which is indicative of the water table/perched water table – and is indicated on drawings to be up to 14m deep in places (estimate). This pond was rust/red coloured on the date of site inspection. There are earthen berms on three sides of the quarry (excepting the northeast side) which are recolonized by vegetation. The ridge into which the quarry is dug extends further to the northeast, where there is gorse scrubland. Otherwise, the quarry is surrounded by agricultural land. There are no watercourses in or around the quarry.

- 4.4 Although the quarry was open on the date of site inspection, there was no quarrying taking place; no machinery/plant was running, other than a small portable generator to power the office building. No trucks arrived or departed for the duration of the site visit (approximately 3 hours).

## **5.0 REPORT OF WEXFORD COUNTY COUNCIL**

- 5.1 The Report of Wexford County Council, received by the Board on 27<sup>th</sup> May 2014, can be summarised in bullet point format as follows-
- The planning and enforcement history of the site is outlined.
  - Recent Wexford County Development Plans indicate that the site was not in or adjoining designated sensitive or vulnerable landscape, and the site did not adjoin a scenic route.
  - The site lies within a Landscape of Greater Sensitivity (Boley Hill) in the Wexford County Development Plan 2013-2019. Quarrying in such landscapes is not precluded in principle.
  - Documentation submitted to the Board is not particularly clear in relation to volumes of rock extracted from unauthorised parts.
  - Documentation is unclear in relation to depth of extraction on the northeastern side of the quarry (currently under water).

- It is noted that information submitted to the Board indicates that unauthorised extraction took place between 2010 and 2012. At the time of making its decision, this information was not available to Wexford County Council.
- There are a relatively high number of dwellings in close proximity to this quarry. There is no public water supply in this area, and residents rely on wells.
- There are no archaeological sites or cultural assets close to the quarry site.
- The quarry is not subject to any flora or fauna designations. There is relatively little information in the rEIS relating to flora and fauna on site prior to commencement of quarrying.
- The chapter of the rEIS on soils, water and geology is relatively comprehensive. Definitive remedial and mitigation proposals have not been submitted.
- The impacts of this quarry on groundwater are a matter of serious concern. The quarry overlies the Campile Formation/Duncannon Group – a regionally important aquifer – from which the town of Gorey receives its water supply.
- A local resident has commissioned a monitoring report on a private well – submitted with this observation. The Council undertook monitoring of a further private well in 2012 – results submitted with this observation.
- There is no obvious discharge point for surface water from this quarry. There is no reference made to dewatering this quarry – an activity which would probably have been necessary to allow for extraction of rock below the water table. Surface water management arrangements provided for in application ref. 2003/1365 have not been formed. Surface water draining to the sump in the quarry will become contaminated by waters within that sump/pond.
- The rEIS does not comprehensively cover the issues of air, climate, noise and vibration. Monitoring only appears to have been carried out in 2012. Some readings exceeded limits attached by way of planning permission condition. Properties to the northeast of the quarry are likely to have been affected by dust carried on the prevailing southwesterly winds. The Council undertook dust monitoring at the Hobbs house to the southwest of the quarry in 2013. Readings were generally within permitted limits. Quarrying activity was slow at this time. A copy of the monitoring data can be supplied to the Board, if required.
- Conclusions of the rEIS in relation to visual impact are reasonable.
- There is no information regarding traffic impacts in the rEIS. HGV traffic at this quarry has given rise to some adverse impacts on the local road network in respect of additional wear and tear. The additional traffic generated by the unauthorised section of this

quarry is difficult to calculate. The planning authority notes that the annual development contribution for roads, required by condition under 2003/1365, has not been paid since 2006.

- Arrangements for management of surface water and landscaping at the entrance – as proposed under 2003/1365 have not been carried out.
- Proposed works such as a wheel wash and drainage cannot be authorised through the substitute consent process.
- The planning authority considers that the impact of the development on groundwater is the principal issue of concern. There is a lack of clarity as to which remediation measures would constitute the best short-term, medium-term or long-term solution(s). The costs of remediation should not be borne by Wexford County Council or local residents.
- The proposed scheme to restore the site is deficient in a number of ways. The Council would not support any proposal to import materials to the site for remediation purposes. The size of the pond which would remain is not clear.
- The planning authority considers that substitute consent should be refused in this instance – primarily for the reason that the unauthorised work which it is sought to regularise has caused and/or significantly compounded the very serious issue of contamination of ground water.
- Should the Board decide to refuse the application, it is requested that the applicant be directed to undertake remedial measures to address the adverse effects on the environment, generated by this development, further to section 177L of the Act.
- It is also suggested that the Board direct the applicant to cease operations at the quarry further to section 177L, in the light of adverse effects on the environment and as permission 2003/1365 has expired.
- The Council questions whether the matters referred to in point 3 of the application title can be authorised under a substitute consent application. Works to the access road relate to future quarrying activity which cannot be permitted in the substitute consent application.
- The Board will note the date when quarrying activity requiring EIA took place, relative to 3 July 2008.
- Should the Board be minded to grant substitute consent, a list of conditions which should be attached is suggested.

5.2 The submission is accompanied by the following-

- Planning Enforcement Internal Memo regarding decision of Board in relation to QV0243.
- Correspondence on enforcement file ref. 0118/2012.
- Correspondence on enforcement file ref. 0047/2012.



- Details of planning applications in the vicinity of the quarry.
- Wexford County Council well monitoring from 2012.

## 6.0 PRESCRIBED BODIES

6.1 The application was referred by the Board to a number of Prescribed Bodies on 1<sup>st</sup> May 2014, as follows-

- Development Applications Unit of Department of Arts, Heritage and Gaeltacht.
- An Taisce.
- Fáilte Ireland.
- The Heritage Council.
- An Chomhairle Ealaíon.
- Inland Fisheries Ireland.
- Department of Communications, Energy and Natural Resources.
- Health Service Executive.

6.2 Responses were received from The Geological Survey of Ireland (on behalf of the Department of Communications, Energy & Natural Resources), Inland Fisheries Ireland, and the Health Service Executive.

### 6.2.1 Geological Survey of Ireland

The response of the GSI, received by the Board on 7<sup>th</sup> May 2014, indicated that there was no comment to make.

### 6.2.2 Inland Fisheries Ireland

The response, received on 28<sup>th</sup> May 2014, can be summarised in bullet point format as follows-

- The site is within the catchment of the Owenavorrhagh River – with two small tributaries rising in proximity to the quarry. The river is salmonid, with good populations of salmon, brown trout and sea trout. Salmon, River lamprey, Brook lamprey, Sea lamprey and Otter are supported by the river.
- Of serious concern is the low pH results revealed by investigations in ground water. The pH of 2.6 recorded in the sump/pond is extraordinarily low. The low pH results have associated elevated metal concentrations.
- The two tributaries of the Owenavorrhagh River are likely to be the ultimate receptors for contaminated ground water recharge.
- Inland Fisheries Ireland questions the assumption that the quarry is not impacting on surface waters.
- The distance of the quarry from the headwaters for the two tributaries referred to above is approximately 350m to the one to the southwest, and 600m to the other to the east. Long-term physico-chemical and biological data from these two watercourses is

essential to assess the impacts of the contaminated ground water recharge upon these watercourses.

- IFI is concerned that it is proposed to further quarry at this area in order to provide land and revenue for remediation.
- Figure no. 9 of the rEIS is a conceptual model of the quarry, and highlights a band of sulphide-bearing rock. It is not clear from the diagram how much of this rock is above or below ground water level. Further quarrying may lower the water table within the sulphide-bearing stratum, leading to further Acid Rock Drainage (ARD).
- The operator must satisfy the planning authorities that there is no threat of groundwater or surface water contamination from quarrying activities.

### 6.2.3 Health Service Executive

The response of the HSE, received by the Board on 4<sup>th</sup> June 2014, can be summarised in bullet point format as follows-

- A site visit was carried out on 28<sup>th</sup> May 2014.
- There are approximately 25 houses within 500m of the quarry.
- Some neighbours have allowed wells to be tested for the purposes of compiling the rEIS.
- The Non-Technical Summary document does not adequately inform the lay reader as to what 'Acid Rock Drainage' (ARD) is, and the effect it is having on this quarry.
- The rEIS contains a preliminary report on ARD. The exact mechanisms of the generation of ARD in this quarry have not been determined. Investigations into the geology of the area have been conducted and are ongoing. Investigations into hydrogeology have been conducted, but are not conclusive – leaving a number of possible scenarios open for consideration.
- There does not appear to be any problem regarding dust deposition from reports carried out, or as indicated by site visit. However, in the incidence of ARD, a metal analysis of the particulate matter in the dust gauges should be carried out to determine levels of Aluminium, Arsenic, Cadmium, Chromium, Iron, Lead, Manganese, Mercury, Nickel and Zinc. Wind direction should be taken into consideration when selecting sites – rather than measurements in the quarry void. Pathways to exposure for workers and local residents would need to be identified and eliminated.
- The noise report is a compliance condition for 2012.
- No vibration report is included for blasting – although photocopy results for 2010 (2 no. results) and 2011 (1 no. result) are appended without explanation. It is stated that there has been no blasting for the past two years.
- The information given in relation to geology is an initial assessment only – with ongoing testing being carried out. A fault zone

containing Pyritic mudstone has been exposed in the quarry and this may be the main source of ARD through surface water run-off. However, recycling of wash water from the quarry stones and other aggregates and pond water evaporation/concentration during very dry weather may also have played a role. There has been no attempt to remove or cover the Pyritic rock since it was exposed in 2012. Covering of exposed Pyritic rock face using either suitable neutralising or inert materials, whether natural or synthetic, is required to prevent further ARD.

- The groundwater base flow in the area may affect the Owenavorrhagh River which is salmonid. There is also a small wetland in the area. There may, however, be a catchment divide. It is necessary to determine what tributaries (if any) are affected by acidification, elevated heavy metals or sediment.
- Surface water at the quarry entrance may have deposited a quantity of sediment over the years in adjacent road drains, and this may be suitable for metal analysis.
- It is not clear where surface water from different parts of the quarry discharges to. A surface water management system is required.
- The quarry has not been dewatered over the past two years, but it is thought that either an intermittent water table or the permanent water table is above the level of the sump/pond. The quarry pond has become acidified (pH 2.6-2.7). Whether the pond is treatable has not been determined.
- The following needs to be determined:-
  1. Volume of groundwater entering the quarry.
  2. Is the pond water stratified?
  3. Is ARD due to exposed Pyritic mudstone (and rainwater flow off it) or is water leaching out through fissures in the cliff face above or below the pond/sump?
  4. Accurate information regarding oxygen and iron fractions within the pond. It would appear that iron is being held in colloidal suspension.
  5. If wash water were withheld from the pond/sump, would it be possible to treat the remainder, and discharge the contents to surface water under Discharge Licence?
  6. If the pond/sump dries out, could it be desludged and sealed using an earth plug or impermeable lining?
  7. Could a new, lined washings pond be created elsewhere within the quarry – one which is sealed from the aquifer?
  8. Drinking water is stated to be from a well on the quarry site – but is stated by the quarry manager to be brought in.
  9. Is there borehole water suitable for dust suppression such as will not exacerbate ARD?
  10. Whether there are one or two ground water catchments beneath this quarry needs to be determined.

- A comprehensive survey of all wells in the area is needed.
- Public water supply sources at Camolin and Barnadown need to be tested.
- The HSE is familiar with boreholes in the county with excess but treatable iron and manganese and a pH between 5.5 and 6.0.
- Some contamination of the site with hydrocarbons was noted, as is the lack of bunding and hard standings at oil tanks.
- There were no toilet facilities on the site at the time of inspection. The fissured rock substrate would not be suitable for septic tank. A portable chemical toilet would be required.
- There is no safety signage at the quarry.
- No proposals were outlined in the rEIS for an alternative water supply for houses in the area, should one be required.
- The pathways for exposure of local residents and workers to heavy metal contamination needs to be quantified.
- A detailed Environmental Management Plan needs to be drawn up.
- ARD has the potential to create even more environmental damage – should the quarry be abandoned.
- Cost is clearly a factor for the applicant, as this is the sole quarry owned by the company.

## 7.0 OBSERVATIONS

- 7.1 There are a total of four observations submitted to the Board from-
- S.J. & John Teahan, “Froyle”, Bolinready, Ballycanew – received by the Board on 27<sup>th</sup> May 2014.
  - Michael Tighe & Ann Tighe, Belcarrig, Ballycanew – received by the Board on 28<sup>th</sup> May 2014.
  - Ian Doyle Planning Consultant, agent on behalf of S, M, & D Hobbs, Balcarrighill, Ballycanew, received by the Board on 28<sup>th</sup> May 2014.
  - E. Reilly, Ballyfin, Gorey, received by the Board on 30<sup>th</sup> May 2014.
- 7.2 The issues raised in the observations can be summarised in bullet point format as follows-
- Planning permission has now expired at this quarry. The third item in the list of what was applied for is not, therefore, relevant – processing/stockpiling areas, plant, offices/toilet/storage buildings...
  - Despite planning permission having expired, the quarry remains operational.
  - Decision to quarry below water table was deliberate and not accidental. Expansion beyond the permitted boundary was not accidental either.
  - The quarry has a history of breaching rules and regulations. It is now a potential risk to human health with contamination of ground

water. The recommendations of the Hydrogeological Report prepared for application ref. 2003/1365 were ignored. This is borne out by the Hydrogeological Report prepared in 2012 by Brightwater Environmental. There is no indication that any of the recommendations contained in this latter report were ever acted upon.

- Final extraction at this quarry was to have been 5m above the water table.
- There is no indication of the ultimate disposal place for waste from the 'Portaloo' on site.
- There has been no ground water monitoring carried out since the quarry got permission in 2004. Recent results indicate contamination in quarry observation wells.
- Chemical analysis of groundwater, carried out in 2003, show levels to be normal. By 2012, levels were exceeding drinking water standards.
- Private well no. 3 (as shown on figure 7 of the rEIS) was not tested as stated on 1<sup>st</sup> June 2012, and has not been tested.
- Two wells are already contaminated PW6 & PW7 – the granting of substitute consent could lead to the contamination of others.
- It would appear that nothing has been done since 2012, when problems with groundwater came to light.
- Long-term mitigation measures are proposed alongside future quarry extension, in order to provide revenue for remediation. There should be no further quarrying at this site.
- Letters of consent from adjoining landowners Robert Rothwell and Henry Rothwell are dated 2012, and give consent to Belcarrig Quarries, not Redrock Developments Ltd. These letters were written in relation to a previously refused permission for a concrete batching plant.
- HGV traffic to and from this quarry was excessive during the Celtic Tiger period. Sometimes traffic headed west from the quarry entrance.
- A wheel-wash should not be needed for a quarry that does not have planning permission.
- The quarry regularly operated outside permitted working hours.
- Contaminated water from the pond/sump should not be used for dust suppression. Proposed future sprinklers should not be needed – as permission has expired.
- Some of the drawings submitted with this application for substitute consent formed part of the application for a concrete batching plant in 2011.
- It is acknowledged at section 5.9 of the rEIS, "that the operation at the quarry has had a significant to profound impact on the water quality within the quarry floor and a potentially significant to profound impact on the groundwater quality in the vicinity of the site

through the excavation and processing of sulphide bearing material”.

- The site notice was erected on the gatepost and not visible from the public road. Several days later it was moved to a more prominent position.
- Blasting has taken place outside permitted house – sometimes as late as 17.00 hours.
- Quarry operator has allowed levels of dust on the access road to go untreated.
- Noise from the quarry has been a constant nuisance for residents.
- Groundwater is the only source of drinking water for houses in this vicinity
- If substitute consent is granted for this quarry, any conditions attached will be ignored – just as they were when permission was granted by the Board in 2004.
- This area is already well-served by quarries.
- Vibration at the house of the Tighe family has been noticeable at blasting times, and only once has it been monitored. The house is within 250m of the quarry, and residents were rarely, if ever, informed of blasting.
- The well of the Tighe family could become contaminated, as the house is downhill of the quarry.
- The Hobbs family own 3 no. one-off houses to the south of the quarry and has permission for a fourth house. All three Hobbs houses initially had their own private wells. Two of these wells are now contaminated as a direct result of quarrying – being classified as weak acid. All three houses are now served from one well – located close to the other two contaminated wells. Ground water vulnerability is classified as being ‘Extreme’. There is no public water supply in the area.
- The rEIS fails to properly assess the effects of the quarry on the environment, does not propose any remedial works to remedy the adverse effects, and fails to specify a timeframe within which remedial measures should be carried out.
- The rEIS does not cover the issue of blasting.
- As the quarry has extended beyond its boundary – the rate of extraction (and hence traffic) must have been higher than indicated in application ref. 2003/1365.
- The pond/sump on site is not a ‘lagoon’. The water in this pond is not suitable for washing aggregates, wheel-wash or dust suppression. The well on site is referred to as ‘non-productive’.
- There is no timeframe outlined in the rEIS for the remediation of this quarry – contrary to the requirements of section 177F(ii) of the Act.
- Groundwater flow in the rEIS is indicated in a southwesterly direction. It is reasonable to assume that wells located in this direction are most at risk from contamination.

- High levels of metal contamination within wells and boreholes are associated with ARD.
- The pH of water tested within the quarry (boreholes BH2 & BH3 and within the sump) are more akin to acetic acid.
- It is common enough for iron and manganese levels to be elevated in Ordovician bedrock. However, the high levels encountered at this quarry are anthropogenic in origin. The bedrock underlying the quarry is classified as a regionally important fissured aquifer – indicating highly permeable rock likely to contain faults and fractures.
- The rEIS fails to deliver any strategy to deal with groundwater contamination. The Cost Benefit Analysis carried out by the applicant fails to offer any clear commitment to implement any measures.
- Dust deposition has likely exceeded 130mg per sq.m per day over a 30-day period. Dust is worst around blasting times.
- There is no baseline noise survey for this site. The noise survey carried out is scant, and does not provide an accurate picture.
- It is accepted that the quarry has a limited impact on visual amenity.
- Section 9.2 of the rEIS in relation to interaction between chapters, attempts to downplay the interaction between human beings and groundwater/soils.
- The provision of an alternative source of drinking water for houses cannot be considered a mitigation measure – as such provision is beyond the control of the applicant.
- It is stated that when the quarry is remediated, a not overly deep pond will remain. This is at odds with the very deep pond present on site.
- Section 5.4.5 of the rEIS indicates a long history of pyrite on site.
- Well PW3 belongs to the Reilly family – and has not been tested (as stated in the rEIS).

## **8.0 RESPONSE SUBMISSIONS**

8.1 The observations of S. J. Teahan & John Teahan and S, M, & D. Hobbs were referred, by the Board, to the applicant for comment, on or before 30<sup>th</sup> June 2014.

8.1.1 The response of PD Lane Associates, received by the Board on 25<sup>th</sup> June 2014, indicates that the applicant would require additional time to deal with the issues raised by the two observers. [Subsequent contact with the Board indicated that it was not proposed to grant additional time for submission of comments, and that the deadline of 30<sup>th</sup> June stood]. There was no detailed response received.

- 8.2 The observations of S. J. Teahan & John Teahan and S, M, & D. Hobbs were referred, by the Board, to Wexford County Council for comment, on or before 30<sup>th</sup> June 2014.
  - 8.2.1 The response of Wexford County Council, received on 13<sup>th</sup> June 2014, indicated that there was no further comment to make.
- 8.3 The submission of Wexford County Council was referred to the applicant for comment, on or before 30<sup>th</sup> June 2014.
  - 8.3.1 There was no response received.
- 8.4 The submission of Inland Fisheries Ireland was referred to Wexford County Council for comment, on or before 30<sup>th</sup> June 2014.
  - 8.4.1 The response of Wexford County Council, received on 13<sup>th</sup> June 2014, indicated that there was no further comment to make.
- 8.5 The submission of Inland Fisheries Ireland was referred to the applicant for comment, on or before 30<sup>th</sup> June 2014.
  - 8.5.1 The response of PD Lane Associates, received by the Board on 25<sup>th</sup> June 2014, indicates that the applicant would require additional time to deal with the issues raised by Inland Fisheries Ireland. [Subsequent contact with the Board indicated that it was not proposed to grant additional time for submission of comments, and that the deadline of 30<sup>th</sup> June stood]. There was no detailed response received.

## **9.0 ASSESSMENT – General Comments**

### **9.1 Temporary Cessation if Necessary**

It is open to the Board to consider issuance of a temporary cessation notice under section 177J. Having regard to the information presented in the application and the rEIS, the reports of Wexford County Council, the Health Service Executive, Inland Fisheries Ireland, the observations received from residents of the area, and to what was observed at the time of inspection of the site, it is my opinion that quarrying at the eastern end of this quarry pit is clearly giving rise to a very significant current adverse effect on the environment, in the form of Acid Rock Drainage. There does not appear to have been any recent quarrying in the vicinity of the flooded eastern end of the quarry (the depth of water preventing access to the surrounding quarry faces to the northwest, north and northeast. There is no evident indication of any proposal to recommence quarrying in this location. For this reason, I do not see that invoking section 177J would be of any benefit.



## 9.2 Board Direction to Take Remedial Measures

Section 177L of the Act provides that, where the Board refuses substitute consent, it may give a draft direction, in writing, to the applicant concerned, requiring him or her to cease all or part of the quarrying activity and/or to carry out remedial measures within a specified period. I would note again that permission for quarrying at this site expired in February 2014. The rEIS has suggested a number of remedial measures to deal with the Acid Rock Drainage issue at this quarry – some of which are short-term, medium-term or long-term. The rEIS indicates that there is no certainty that any or all of the solutions put forward will remedy the problem. The rEIS indicates that further studies are needed. In the light of this uncertainty, and the need for further studies and tests, I would not recommend that the Board invoke section 177L. The issue of ARD would be better dealt with by the quarry operator and the local authority, in the absence of any one specific, and proven proposal, to remedy the problem. I do not think that there is sufficient information before the Board to issue a Draft direction on what needs to be done to remedy the ARD problem.

## 9.3 Extent of Site & of Permission

9.3.1 This application for substitute consent relates to a quarry site (3.875ha) for which permission was granted by the Board on the 17<sup>th</sup> day of February 2004 – ref. 2003/1365. The quarry has expanded beyond the permitted boundary – particularly to the northwest, north and northeast. The stated area of the quarry is now 5.2416ha, although the extraction of stone outside the previous boundary is stated to be only 0.576ha. These figures do not add up – and some or all of them are incorrect. The difference between the permitted area of the quarry and the stated area of the quarry in this application for substitute consent is 1.36ha. The extraction of stone below the permitted level is stated to cover an area of 0.19ha – although drawings submitted with the application for substitute consent show an area below the permitted extraction level of significantly in excess of 0.19ha – which I calculate to be approximately 0.65ha. The area of extraction below the water table (and outside of the permitted quarry area) is indicated on drawings submitted, which I calculate to be 0.4ha.

9.3.2 Of particular note is condition no. 2 of permission ref. 2003/1365 which states as follows-

*This permission is for a period of 10 years from the date of this order. No further extraction shall be permitted and the full restoration of the site shall be completed to the satisfaction of the planning authority within one year of the cessation of extraction works. Within three months of the date of this order the applicant shall submit for the written agreement of the*

*planning authority details of the proposed restoration of the site which shall include measures to reduce the visual impact of the vertical excavation faces shown on drawings submitted with the application.*

**Reason:** *To limit the impact of the development on the amenities of the area.*

- 9.3.3 This planning permission expired on 16<sup>th</sup> February 2014. The application for substitute consent was lodged with the Board on 25<sup>th</sup> April 2014.

#### **9.4 Timing of Unauthorised Development.**

Wexford County Council determined that Environmental Impact Assessment should have been carried out at this quarry in relation to extraction beyond the permitted boundary – under Section 261A(2)(i) of the Act. The quarry owner/operator was directed to apply to the Board for substitute consent with the inclusion of a n rEIS. The decision of the Council contained the following paragraph '*There is insufficient evidence with regard to the extent of the unauthorised work which was undertaken after 3 July 2008 to enable a clear assessment as to whether screening for EIA was required for that work which in particular was carried out after 3 July 2008*'. This determination/decision of the Council was the subject of Review to the Board (**ref. 26.QV0243**). The Board looked at the determination/decision of the Council, and was in a position to either confirm or set aside the decision and/or determination. The Board upheld the determination/decision of the Council, and required the quarry owner/operator to apply to the Board for substitute consent. Page 1 of the rEIS submitted with the application for substitute consent clearly states in the second paragraph as follows- 'The Development took place mainly between the years 2010 and 2012'. The Report of Wexford County Council on this application for substitute consent (received by the Board on 27<sup>th</sup> May 2014) indicates that this information was not available to the Council when it made its original determination/decision under Section 261A (2) & (3). Based on the information supplied in this rEIS, the correct determination/decision for Wexford County Council would have been under section 261A (5) for development carried out post 3<sup>rd</sup> July 2008, which would have required EIA. The outcome of such a determination/decision would have been the issue of an enforcement notice requiring the cessation of the unauthorised quarry development. The quarry owner/operator would not have been permitted to apply to the Board for substitute consent. The quarry operator has complied with the determination/decision of the Board under Review – and has submitted an application for substitute consent together with an rEIS. It would appear that the only option open to the Board is to carry out EIA in relation to this quarry. It is not open to the Board to revisit the original determination/decision of Wexford County Council.

## **9.5 County Development Plan**

The current document is the Wexford County Development Plan 2013-2019. There are no designated landscapes, protected areas, Protected Structures or protected views/prospects within or immediately abutting this site. The Plan recognises the importance of quarrying to the economic development of the county. The site lies within a Landscape of Greater Sensitivity (Boley Hill) in the current Development Plan. Quarrying in such landscapes is not precluded in principle. It needs to be borne in mind that planning permission was granted for a quarry at this site in 2004.

## **9.6 Financial Contribution**

Condition 11 of permission ref. 26.203600 required the applicant to pay a development contribution (amount unspecified) to the planning authority. The report of Wexford County Council indicates that the agreed contribution has not been paid since 2006. This is a matter of enforcement for the local authority. However, the quarry has expanded beyond its permitted boundary by 1.36ha. In the event that substitute consent is given for this quarry, a condition should be attached requiring the developer to pay an amount in accordance with the prevailing Development Contribution Scheme of Wexford County Council.

## **9.7 Reinstatement**

The application for substitute consent includes a drawing of the reinstated quarry. The drawing shows a small pond in the northeast sector of the quarry which 'will not be overly deep'. Earth berms around the quarry void will be tipped into the quarry to allow for slopes for planting. Native woodland species will be planted around the perimeter. All machinery/plant and buildings will be removed. When the quarry is abandoned it will turn into a wildlife habitat of some value locally. However, because of ongoing contamination issues relating to groundwater, it is stated that future expansion of the quarry will provide revenue and land for remediation measures within the overall quarry. I note that condition no. 10 of the Board's decision to grant planning permission for quarrying at this site (PL 26.203600) required lodgement of a bond with the planning authority to secure the satisfactory reinstatement and landscaping of the site. I note that this planning permission expired in February 2014. The Report of Wexford County Council on the application for substitute consent gives no indication of whether condition 10 was complied with. In the event that the Board is minded to grant substitute consent for this quarry, a condition should be attached requiring the quarry to be reinstated in accordance with the Drg. R – 25 – 32 (received by the Board on 25<sup>th</sup> April 2014).

## **9.8 Nature of Development for which Substitute Consent is sought**

The application for substitute consent refers to three aspects – the first two of which relate to extraction of stone. The third relates to ancillary development – some of which relates to buildings, wheel-wash etc. Many of the facilities listed are for the purposes of facilitating future quarrying and are not properly the subject matter of applications for substitute consent, and are not works which would be required in order to mitigate an impact on the environment.

## **10.0 ASSESSMENT – Environmental Impact Assessment**

### **10.1 General Comments**

The rEIS is accompanied by a Non-technical Summary (contained within a pouch at the front of the main volume). Appendices are contained within the same single volume at the end of the relevant chapters. The original application for quarrying at this site (ref. 2003/1365) was not accompanied by an EIS.

### **10.2 Consideration of Alternatives**

The rEIS does not refer to alternatives. Having regard to the nature of the application, consideration of alternative sites is not relevant. Again, consideration of alternative means/methods of extraction is not relevant. The quarry void is as it is.

### **10.3 Structure of remedial Environmental Impact Statement**

The rEIS submitted examines the impact of the development that has been undertaken on the site under a grouped format approach with each of the impact areas set out in Article 3 of the EIA Directive being addressed for potential impacts, proposed mitigation measures and residual post-mitigation effects. There are separate chapters covering human beings, material assets and cultural heritage; flora and fauna; soils, geology and water; air and climate; noise and vibration; landscape and visual impact, and the interaction of the foregoing.

### **10.4 Historical/Current Operating Level**

In terms of impacts, and having regard to the retrospective nature of the application and assessment, it is also noted that the site which forms the basis of the analysis contained within the rEIS is operating at an historically low output level relative to the height of the economic boom.

The expansion of the quarry beyond the permitted boundary has resulted in the application for substitute consent.

## **10.5 Human Beings, Material Assets & Cultural Heritage**

Section 3 of the rEIS deals with these issues. There are stated to be 5 no. full-time employees. Working hours are stated to be 0800-1800 Monday-Friday and 0800-1400 on Saturdays. The development has had no significant impact on either population or employment in this area. The impact on land use is limited – give the amount of similar-type land available in the area. Section 3.3.5 deals with archaeology. There are no archaeological sites indicated on the Record of Monuments and Places of the OPW – the closes being WX016-016, a cist on the opposite side of the county access road. No archaeological monitoring would appear to have been carried out when soil was stripped/mounded at this 5.24ha site. There are no Protected Structures either within or immediately abutting the quarry. Section 3.3.7 deals with the issue of traffic and transportation. The level of detail provided is sparse. Haul routes are not indicated. It is stated that 95% of HGV movements are to and from the direction of Ballycanew – exiting the quarry and travelling eastwards. There are no traffic counts or junction analyses. There is no indication given for HGV movements over the years – other than bald figures in section 2.3 of 20 laden HGV movements per day. There is a weighbridge at this quarry and records must exist of the number of loads of aggregate leaving this quarry. In the absence of any more detailed information in relation to HGV traffic volumes, it is difficult to be certain that the conclusion reached in the rEIS is a valid one – viz. “Due to the mitigation measures introduced regarding the traffic and transportation for the Development during its operation, low to moderate environmental effect occurred as a result of the Development”. Against the above, it must be pointed out that planning permission existed for the quarry at this location. The permission did not put any upper limit on extraction rates – instead requiring at condition 3 that levels of abstraction be agreed with the planning authority prior to commencement of development. On balance, I would consider that the traffic volumes generated by this quarry would not have had a significant impact on the environment.

## **10.6 Flora & Fauna**

10.6.1 Section 4 of the rEIS deals with this issue. The site was stated to have been visited in March 2014 (date unspecified). There are two principal habitats on site- ‘Active quarries and mines’ and ‘Recolonising bare ground’. There is also an artificial quarry pond – ‘Artificial lake or pond’. Species of flora encountered are indicated at section 4.2.2. There is stated to be no vegetation or animal life within the pond – although this

would develop over time. There is no map or drawing indicating the location of the different habitats on the site.

10.6.2 Rabbits are plentiful in the vicinity of the site. Badger paths exist on lands around the quarry, but there is no indication of badgers entering the quarry. There is no bat habitat on the site. There was no bat survey undertaken. The list of bird species frequenting the site or its boundaries is limited. There was no indication of birds nesting in quarry cliffs. The site is not suitable for sand martin. There was no survey of insects undertaken. The pond is devoid of any animal life.

10.6.3 The site does not form part of any ecological designation. Nor are there ecological designations immediately abutting the site. The closest designated site is approximately 12.0km distant at Cahore Polders and Dunes SAC (Site code 000700). The Courtown Dunes & Glen pNHA (Site code 000787) is approximately 8.0km distant. This pNHA forms the outflow to the sea of any natural drainage from the quarry. There is no map showing the location of the quarry in relation to the closest ecological designations – SPA, SAC or pNHA. I calculate that the River Bann, which is a tributary of the River Slaney, and which forms part of the Slaney River Valley SAC (Site code 000781), is approximately 4.7km to the northwest of the quarry as the crow flies. The Cahore Polders and Dunes SAC (Site code 000700), I calculate to be 10.3km to the east of the quarry, as the crow flies. The Cahore Marshes SPA (Site code 004143) I calculate to be 10.2km to the east of the quarry, as the crow flies. The Courtown Dunes and Glen pNHA (Site code 000787) I calculate to be 9.5km northeast of the quarry as the crow flies: the connection via watercourse would be longer. However, whilst drainage from the quarry is stated to be towards this pNHA (at the outfall of the Owenavorrhagh River to the sea), there is no direct surface water connection from the quarry. There are no surface water features on the boundaries of the quarry – it being located at the summit of a ridge. I would be satisfied that the separation distances involved would ensure that there will be no significant impact on any European site. The Courtown Dunes and Glen pNHA is a proposed site only.

10.6.4 I note the concerns raised by Inland Fisheries Ireland about possible impact on the Owenavorrhagh River, which is a salmonid watercourse supporting good populations of salmon, brown trout and sea trout. There is concern that ARD will ultimately percolate through groundwater and emerge into surface waters via two tributaries of the Owenavorrhagh River – one of which 350m to the southwest and the other which is 600m to the east. The direction of groundwater flow is indicated in the rEIS as being towards the southwest. The fact that the level of the sump in the quarry seems to have stabilised would indicate that rainwater run-off into the quarry is percolating out through groundwater. It is not possible to state

with certainty that groundwater flow from this quarry would not have resulted in acidification of surface waters in streams in the vicinity of the quarry over time or that it may result in acidification of groundwater at some stage in the future.

10.6.5 There has been a progressive loss of low level heathland, exposure of rock and cliff-face. Section 4.3 states that there is no washing of aggregate on site – a statement which is contradicted elsewhere in the rEIS. The progressive loss of habitat will not have been significant in terms of the amount of similar-type habitat in this area.

## **10.7 Soils, Geology & Water**

10.7.1 Section 5 of the rEIS deals with these issues. An Acid Rock Drainage (ARD) issue was identified at this quarry in 2012. Water in the quarry sump and quarry wells has low pH, high conductivity and elevated metal and mineral levels. The likely contamination source is an area of sulphide-bearing mudstones in a fault zone which has been exposed by quarrying. Site investigations were carried out from 13<sup>th</sup> February - 10<sup>th</sup> April 2014. Rhyolite aggregate for roads and railways is produced at this quarry. Rock is produced through blasting. Rock is crushed, graded, washed and stockpiled on the quarry floor. It is stated that 10,000 tonnes of soil was imported to the site (under Waste Permit 05/26) to construct the berm which surrounds most of the quarry pit. The original high point was 163m OD. Excavation to the quarry floor is 144m with the quarry pond bottom being estimated at 126-128m OD. It is stated that the level of the pond was 134.7m in May 2012, but 143.7m in March 2014 – a significant increase in level and area. This is borne out by photographs included within the rEIS, and photographs taken by Board Inspectors during recent inspections of the site, relating to quarry review and substitute consent. The eastern part of the quarry is stated to be flooded from winter rainfall and the absence of any dewatering. The estimated volume of the pond, in March 2014, is 55,000-60,000m<sup>3</sup>. The water level is stated to drop during dry summers. All houses in the vicinity use private wells, as there is no public water supply. The water level of the sump would appear to have settled at or around 144m OD. I would further note that there was no indication of any significant drop in water level during the summer of 2014 – when the site was inspected on 25<sup>th</sup> August 2014.

10.7.2 The quarry site is located on the boundary of two river catchments – Ballycanew River to the north and Ballinclare River to the south (both tributaries of the Owenavorrhagh River). The majority of site drainage is believed to percolate towards the south. There are no surface water bodies associated with the quarry (apart from the sump). It is stated that there has been no dewatering at this quarry. The site visit carried out on 25<sup>th</sup> August 2014 by this Inspector indicated no recent evidence of

dewatering. Sump water is used for washing aggregate and dust suppression.

10.7.3 The site is underlain by the Ballyhoge Formation to the southeast of the site and the Campile Formation to the northwest. The Campile Formation contains numerous bodies of felsic (rhyolitic) volcanics – within one of which the quarry is located. There were 5 no. boreholes on site in 2003 – BH1, BH2, BH3, BH4 & BH5. BH5 (on the northwestern boundary) was subsequently quarried out. Other boreholes were drilled up to 100m below ground level for water supply for washing and dust suppression. Boreholes BH6, BH7, BH8 & BH9 were drilled in April 2014. Geology is significantly more complicated in the northeastern part of the quarry. The quarry has intersected a major fault between the northeastern edge of the lower working level and the face at the northeastern limit of the quarry. Many of the mudstones in this area are sulphide-bearing pyrite. Oxidation of sulphides is known to generate acid. These sulphide-bearing mudstones are clearly evident in photographs – and extend below the current surface level of the sump within the quarry.

10.7.4 The Campile Formation and the Duncannon Group as a whole is classified by the GSI as a regionally important fissured aquifer (Rf). The Ballyhoge formation to the south is classified as a poor aquifer which is generally unproductive except in local zones (PI). The site is within the Gorey Groundwater Body which is classified as being of good status but is at risk from diffuse sources. This groundwater body covers an area of 81sq.km. Part of the quarry may be in the adjoining Cahore Point Groundwater Body. Groundwater vulnerability is classified as ‘Extreme’ owing to the absence of protective overburden at the quarry. There are stated to be 16 no. domestic supplies within 500m of the site boundary. Boreholes BH2, BH3, BH4, BH6 & BH7 are considered to be down-gradient of the quarry sump. Boreholes BH8 & BH9 may also receive a small amount of groundwater flow from the quarry. From an examination of groundwater flow in 2012 and 2014 – it would appear that the direction of flow is in a southwesterly direction. The only inflow of water to the roughly 4ha. quarry void is rainwater – the quarry being located at the top of a ridge. The rainfall within this void amounts to approximately 19,920m<sup>3</sup> per annum – the recharge rate. The rhyolite rock is stated to be of low permeability. Limited tests have indicated a low groundwater flow rate. However, it is noted that the bedrock aquifer is fissured and that the water level in the quarry would appear to be stable – indicating an outfall for the rainwater recharge through percolation to groundwater. The 19,920m<sup>3</sup> which falls into the quarry as rainwater, will be partly dissipated by evaporation, but the remainder must ultimately percolate to ground. The rEIS does not indicate the likely evaporation rate.



10.7.5 Limited groundwater sampling has been carried out at the quarry. Wells at the quarry were sampled in May 2012 and February 2014. BH1, beside the quarry entrance, showed normal pH of 7.20-7.50. Other wells showed pH levels of 2.76-4.80. Results in BH2 are the lowest. Electrical conductivity levels are elevated in BH2, as are results from BH3, BH6 & BH7. Similarly high ion content was recorded in the above-mentioned boreholes. Sulphate remains elevated above Drinking Water Standards in BH3 particularly, but also BH4, BH6 & BH7. Metal levels are significantly elevated above Drinking Water Standards and Groundwater Regulations Standards in most boreholes – for aluminium, arsenic, cadmium, chromium, iron, lead, manganese, mercury, nickel and zinc (Table 5.4 of the rEIS). Hydrocarbon contamination is evident in BH2, BH3 & BH6. This hydrocarbon contamination can only come from the operations of the quarry itself, given the ridge location. Oil tanks on site are not banded. Hydrocarbons are leaking into the ground on the quarry floor from the diesel generator at the washing plant. There is no indication of how extensive this problem is or for how long it has been continuing. I note that there is a borehole drilled in the quarry floor to the northwest of BH6 (photograph 10 attached to this Inspector's Report). There is no reference to this borehole in the rEIS. Its purpose is not clear – whether for monitoring, wash-water supply or both.

10.7.6 Local wells have been sampled in 2012 and 2014. Private wells PW6 & PW7 are located to the southwest of the quarry (and close to quarry well BH4). These wells have low pH values and elevated concentrations of metals. The wells are no longer in use and supply is from PW4 & PW5. The pH levels in PW2, PW3 & PW4 are slightly below drinking water limit – not unusual in a volcanic area. I would note that the owner of PW3 has submitted an observation to the application for substitute consent, stating that the well has not been tested. The manganese level in PW5 is elevated above drinking water limit.

10.7.7 Water in the quarry pond is highly discoloured – rusty red tinge. This is likely caused by elevated levels of iron. Iron sulphide or sulphides with iron as a constituent will generate significant levels of acidic water. Levels of pH in the pond area extraordinarily low at 2.6 in 2012. Electrical conductivity levels are elevated. There are elevated levels of ions – calcium, magnesium and sulphate. Highest concentrations were from the bottom of the pond from where water is pumped to the washing plant. Metal concentrations are significantly elevated above normal levels for iron, manganese, aluminium, cadmium, chromium, lead, nickel and arsenic. The aggregate washing system is a closed-circuit system, with water from the wash plant being allowed upon discharge to flow back over the quarry floor towards the sump. There are no warning signs for the contaminated water in the sump.

10.7.8 Table 5.6 is a conceptual site model for human health exposure – outlining potential sources, pathways/linkages and receptors. The receptors are the water within the quarry pond, the wider groundwater body, potential surface watercourses via the groundwater base-flow, groundwater users and on-site workers. Sulphide-bearing rock has been extracted in the past (estimated 2008-2010) and treated at this quarry site – something which may have contributed to ARD, with wash-water being discharged back into the sump.

10.7.9 Section 5.7 of the rEIS indicates that clay is likely to have to be imported to this site to construct properly-lined siltation lagoons, and to armour the exposed acid-producing strata of mudstone in the northeastern section of the quarry. It would appear that sufficient suitable material is not available within the quarry as outlined to effect such remediation.

10.7.10 Sulphide Oxidation and Oxidation by Ferric Iron are the likely causes of the Acid Rock Drainage (ARD) at this quarry. The operation of the quarry is stated to have had a significant to profound impact on the water quality within the quarry floor and a potentially significant to profound impact on the groundwater quality in the vicinity of the site through the excavation and processing of sulphide-bearing material, which originates in a relatively small faulted area encountered on the northeast boundary of the quarry. Table 5.7 of the rEIS is a description/outline of the identified potential pollutant linkages and additional impacts of such linkages.

10.7.11 Remedial measures for ARD are divided into short-term and long-term options. Short-term measures include-

- Provide alternative drinking water sources for PW6 & PW7.
- Regularly monitor wells in the area.
- Erect fences and signs at the quarry to warn people of dangers.
- Engineering works to cover exposed mudstones on northeast face.
- Limiting rock extraction to rhyolite, with no extraction in northeast part of the quarry (implemented since 2012).
- Installation of additional monitoring wells (both shallow and deep).
- Further rock testing.
- Assess stockpiles for ARD source material – as it is understood that some pyritic mudstones/shales were extracted and washed.
- Commence treatability trials of acid water.

Medium-term remedial measures include the following-

- Use of commercial grade chemicals to alter the pH of the sump water – either on-site or off-site. On-site lime dosing probably offers the most cost-effective solution to the problem.
- Passive treatment of pond water in constructed wetland systems.
- Hydraulic barriers might be necessary to block the migration of contaminated groundwater.

Long-term remedial measures might require planning permission and may take a number of years to complete. Such would be carried out alongside future quarry extension which would provide land and revenue required to complete effective treatment. Rock-coring would be required before any future expansion. The report of the HSE notes that abandoning this quarry without remediation could lead to exacerbated problems of ARD in the future.

10.7.12 The chapter contains a number of appendices as follows-

A – Preliminary Report, Acid Rock Drainage (22<sup>nd</sup> April 2014).

B – Tabulated Laboratory Analysis Results.

C – Borehole Log Results.

D – Figures and Photo Plates from Geological Assessment Report (2012).

E – Site Photographic Log (April 2014).

F – Glossary of EIA terms from the IGI Guidance 2013.

10.7.13 Section 2.2.6 of the rEIS states that drinking water is taken from a bored well on the site. The exact well is not identified – as there are a number of such wells. However, the report of the HSE indicates that the drinking water is imported to the site.

10.7.14 The ARD problem at this site has been identified and is under investigation. The rEIS indicates that significant further investigation is required to achieve an understanding of the origin of the problem, the extent of the problem and the likely solutions. Water tables and groundwater flow in the area are not fully understood. There is some doubt about the water table within the quarry, and whether the sump level represents the natural groundwater level or a perched groundwater level. Not all private wells in the area have been tested and monitored, and the geology of these wells is not understood – particularly in relation to possible sulphide-bearing strata which the wells may have intersected. The rate of groundwater flow and the direction of flow is not fully understood. The bedrock is fissured, but flow paths may only exist within the upper weathered section of the rock and fissures within the rhyolite. It is acknowledged that ARD could lead to contamination of watercourses in the future, although such would be difficult to gauge without baseline records for water quality in nearby surface water bodies (two streams in this instance). The ridge feature on which the quarry is located may represent a divide between groundwater bodies and the direction of groundwater flow. The rEIS does suggest a number of measures to deal with the problem of ARD, some of which are within the control of the applicant, but others which are not. In particular, the ability of the quarry owner to source an uncontaminated water supply for residents with contaminated wells has not been demonstrated. Some remediation measures would require planning permission, and seem to be dependent on the expansion of the quarry. In the light of so much uncertainty

surrounding the geology and hydrogeology of this area, and surrounding the magnitude of the problem of ARD and workable/affordable solutions to the problem, it would not be possible to state that this quarry has not had a significant negative impact on the environment. Faced with an application for substitute consent with so many unknowns, it would not be possible to state that the development has not had likely significant impacts on the environment, and substitute consent should be refused for the reasons and considerations set out within the recommendation section of this Inspector's Report.

## **10.8 Air & Climate**

10.8.1 Section 6 of the rEIS deals with these issues. The principal item in this section is a Dust Monitoring Report from 2012. The report was in relation to compliance with condition 6 of permission ref. 2003/1365, which set an upper limit for dust emissions of 130mg/m<sup>2</sup>/per day over a 30-day period. Four locations were chosen for monitoring. Table 3.1 sets out the results for the four locations over three monitoring periods – April/May, July/August and October/November 2012. Only in the case of the first period are the actual dates given. There were a number of exceedances – particularly in the first and second period. It should be noted that the threshold is considerably below the more usual 350mg/m<sup>2</sup>/day attached to quarrying permissions. None of the deposition rates exceeded the higher threshold. There are no more recent monitoring results, and there are no monitoring results from the likely busiest years of the economy in and around 2007. There is no analysis of the composition of the dust, and such would not be considered usual. However, in the instance of this quarry, where there are elevated metal levels in the sump water on site (water which is used for dust suppression) it might be considered prudent to analyse dust samples. Such is suggested by the HSE in its report on this application for substitute consent. A number of the observers to this application for subsequent consent have complained of dust nuisance. Crushing, sorting and washing of aggregate takes place on the quarry floor. This location, together with the position of earth berms around the quarry floor will have helped to limit the spread of fugitive dust. However, it is noted that the 200m access road to the quarry is not fully sealed. There is no wheel-wash located within this quarry, something which may have contributed to the spread of fugitive dust. However, it should be noted that drawings submitted with application ref. 2003/1365 did not provide for a wheel-wash, and nor was such a facility required by way of condition. The drawings submitted with the application for substitute consent make provision for a new wheel-wash. There are a number of houses located in the vicinity of this quarry. In light of the potential for fugitive dust to have contained elevated levels of metals, quarrying at this site would have been likely to have had significant effects on the environment.

10.8.2 Quarrying at this 5.24ha site will not have had any significant impact on climate.

## **10.9 Noise & Vibration**

10.9.1 Section 7 of the rEIS deals with these joint issues. The section comprises a Noise Monitoring Report carried out on 11<sup>th</sup> July 2012, in compliance with a condition attached to permission ref. 2003/1365. There are no other noise surveys for this quarry. Only two locations were monitored – at a house to the south and at another to the southeast of the quarry. The monitoring periods were limited to 30 minutes at each of the two locations. Road traffic is stated to have been the dominant source of noise at both locations, with quarry noise comprising a ‘distant sound’. Results were below the stipulated thresholds. Observers to this application for substitute consent have complained of noise nuisance from the quarry. On balance, I would consider that a quarry of this size, located as it is in relation to surrounding houses, would not have been likely to have resulted in significant noise nuisance to residents and would not, therefore, have had a significant impact on the environment.

10.9.2 There are no monitoring results for any blasting which took place at this quarry. The rEIS is silent in relation to impacts from drilling and blasting at the quarry. Observers to this application for substitute consent have complained that prior notification has not always been given of blasting events. Blasting events are infrequent. Having regard to the distance of houses from the quarry, it is unlikely that blasting events had a significant impact on local residents, and hence on the environment.

## **10.10 Landscape & Visual Impact**

10.10.1 Section 8 of the rEIS deals with these issues. A Zone of Theoretical Visibility (ZTV) has been prepared for the quarry – taken from a height of 157m OD on the northeastern boundary of the quarry. Photographs were taken on 3<sup>rd</sup> March 2014. The quality of the copies included in the rEIS submitted to the Board is not good. – and photographs are slightly blurred. The site is at the eastern end of a 4km-long ridge. The area is largely agricultural – fields being surrounded by hedgerows and mature trees. There is some small woodland and forestry in the wider area. The site is within a ‘Landscape of Greater Sensitivity’ within the ‘Lowlands’ landscape category of the Wexford County Development Plan 2013-2019. Earthen berms surrounding the quarry on all sides but to the northeast, screen the pit and workings from view. There is some visibility of the internal cliff face within the quarry when approaching along the county access road from elevated ground to the west. However, such views are intermittent. The earth berms around the quarry serve to screen the pit from view. The

earth berms are planted with Leyland Cypress along the southwestern boundary. The remaining berms have been recolonized by vegetation. The location of the quarry atop a ridge results in it being visible from a wide area. However, no quarry plant is visible above the berms, and the effect on the landscape is not particularly noticeable or jarring.

10.10.2 The additional visual impact, caused by the extension of this quarry beyond its permitted boundary to the northwest, will have been insignificant in landscape and visual impact terms. The additional area involved is 1.75ha approximately – not all of which has been quarried – and some of which has been used for the construction of a screening berm along the northwest boundary of the quarry.

10.10.3 Remedial measures suggested in section 8.5.0 of the rEIS relate to planting as part of the restoration plan for the quarry. The Planning Authority was satisfied that the quarry had not had a significant impact on the landscape of the area, and I would concur with that assessment. The operation of this quarry has not had a significant impact on the environment.

### **10.11 Interaction between Aspects of rEIS**

Section 9 of the rEIS addresses the issue of interaction between the foregoing headings. The principal interactions relate to water and human beings/ecology. The impact of dust on human beings has also been referred to elsewhere in this report.

### **10.12 Conclusion**

The rEIS is in compliance with Articles 94 and 111 of the Planning and Development Regulations, 2001, as amended. The rEIS contains the information specified in paragraphs 1 & 2 of Schedule 6 of the Regulations. There is an adequate summary of the rEIS in non-technical language. The rEIS identified of the likely significant direct and indirect effects of the past operation of the quarry on the environment. I would be satisfied, having regard to the preceding subsections of this Report, that the operation of this quarry has had a likely significant impact on the environment by reference to Acid Rock Drainage and the impact of this on groundwater quality.

## **11.0 RECOMMENDATION**

I recommend that the Board refuse substitute consent for this quarry for the Reasons set out below.

## REASONS

1. Having regard to the nature and scale of the subject development, the planning history of the site, and the provisions of Section 177K(2) of the Planning and Development Act 2000 (as amended), it is considered that the operation of the quarry in this location gave rise to a danger to public health and to the ecology of the area by reason principally of 'Acid Rock Drainage' contamination of groundwater (but also from hydrocarbon contamination), and following on from this contamination of groundwater, a potential future threat to surface waters in the area. In addition, the use of contaminated water for aggregate washing may have resulted in fugitive dust emissions from this site, with elevated concentrations of metals, which may have impacted on residents of the area and road users. To grant substitute consent would, therefore, be prejudicial to public health, detrimental to ecology, and contrary to the proper planning and sustainable development of the area.
2. The remedial Environmental Impact Statement states that quarrying outside of the permitted boundary took place between 2010 and 2012, a period clearly after the 3<sup>rd</sup> July 2008. The Board is, therefore, precluded from granting substitute consent, having regard to the European Court of Justice ruling in case C-215/06, in relation to development which would have required environmental impact assessment, or screening in relation to environmental impact assessment, or where appropriate assessment was required.

---

**Michael Dillon,  
Inspectorate.**

**17<sup>th</sup> September 2014.**