

To: R Thompson. Operations Director. Celtic Energy Limited

From: D Higgins.

Date: 20th of May 2021

**Re: EAST PIT EAST REVISED [EPER] OPENCAST COAL MINE – REF: P2021/0167.
DISCHARGE OF CONDITIONS 58 AND 62.**

The following is in response to correspondence from F.Williams [Carms. C.C.] dated the 22nd of April 2021 relating to the discharge of conditions 58 and 62 of planning application P2021/0167.

The response is made in the order that points are raised by NRW as defined in the correspondence from Carms. C.C.

CONDITION 58.

Bullet 1. The requested details are attached to this document, see Appendix 1 and Appendix 15/2 [attached for ease of reference] which are extracts from the original ES.

Bullet 2. At the current rate of infilling, it is estimated that the point at which discharge may commence could be in October / November 2023.

Bullet 3. Up to the point of discharge, the water contained within the lake will be isolated and remain within the containment structure, i.e., the excavation void. Being totally isolated, there can be no justification for monthly monitoring of water quality and therefore a three-monthly inspection regime is proposed. Such a frequency would give ample warning of any anomalous conditions prior to active discharge occurring. Should any anomalous readings occur, NRW would be consulted and remedial action if required, and any changes to monitoring frequency agreed.

Comparing the data with that contained within the 2012 ES will provide an indication of any significant differences between current water quality and that defined in documentation associated with the 2012 application.

Should the data demonstrate any significant differences then the monitoring frequency may be increased to monthly for a period of 6 months to establish whether there is an identifiable trend.

Monitoring frequency after 6 months will be agreed following consultation with NRW.

Bullet 4. Reference should be made to the documentation submitted as a part of the Environmental Statement associated with the application for planning permission which was granted permission on the 18th of June 2015, reference P2012/1073 which included a survey of current and historical water features [see Appendix 15/6 attached to this document]..

It should be noted that the village of Cwmllynfell is completely isolated from the site by the Cwmllynfell Fault which is a major structural discontinuity. Between the fault and limit of excavation at surface and position of the 175 metres AOD level around the lakeside there is a substantial block of in-situ Coal Measures strata the hydrogeological characteristics of which are such that the lateral transmission of water through the strata would not occur.

Furthermore, a detailed inspection of underground coal mining abandonment plans failed to identify any underground mine workings connections across the fault structure. The flow of water through inter-connected mine workings tunnels or voids will not occur, and therefore there will be no impacts on the Cwmllynfell area associated with the lake once its final rwl is achieved.

CONDITION 62. Abandoned Mine -Water Discharges.

The opencast coal sites which have historically operated across the area between Tairgwaith in the west and Cwmllynfell in the east have involved the extraction of the Big Vein and over-lying coal seams. Most have extracted the seams from their outcrop positions though in some locations the Big Vein has been extracted from positions which are down structural dip [i.e., at a lower level] from the crop position leaving a block of strata in place between the outcrop and extraction limit. This has occurred to a limited extent on the EPER site.

The recorded surface positions of shaft and adit locations lying immediately to the north of the EPER site are as shown in drawing 07/02 'Historic Underground Mining', and all lie above the rwl of 175 metres AOD. It can therefore logically be concluded that there will be no mine water emergences from these structures.

The Bounce and Brass adits which are located approximately 1.5 kilometres to the west are at a lower level than the lake rwl, but are hydraulically isolated being in lower level seam horizons and on the west side of the indicated watershed [see drawing No.15/03 Inferred Groundwater Levels].

As noted in previous documentation compiled in response to queries raised by NRW, and as is shown in drawing 15-/03 'Inferred Groundwater Levels', [based upon groundwater monitoring data including boreholes], there is a well-defined watershed located several hundred metres to the west of the lake. Water levels are shown to fall from a level of around 220 metres AOD [which current water level monitoring data [borehole B] shows the level to still be at around this elevation] towards the lake from this feature, i.e., to the east rather than to the west. This gwl is 45 metres above the final rwl of the lake [175 metres AOD] thus the lake will not impact on discharges from this area

Furthermore, the Bounce and Brass adits are drainage structures associated with abandoned mine workings in lower-level seam horizons occurring below the Big Vein Seam with which there is unlikely to be any cross-measures drifts or staple shaft connections. Consequently, there will be hydraulic isolation between water levels within the made-up-ground associated with previous opencast workings in the Big Vein Seams. Discharge from the drifts will not be affected by the proposed lake in the EPER Site.

Current gwl's to the south of these adits are already higher than the discharge levels and higher than the lake rwl [175m AOD]. It is therefore implausible that the lake will impact on water flows in these locations.



DAB Higgins

Attachments:

Hydrographs for boreholes 1A,2,3,4,5,A2,B and C3.

Appendix 1.

Appendix 15-2 Borehole completion details.

Drawing No. 07/02 Historic Underground Mining.

Drawing No. 15 / 03 Inferred Groundwater Levels.