

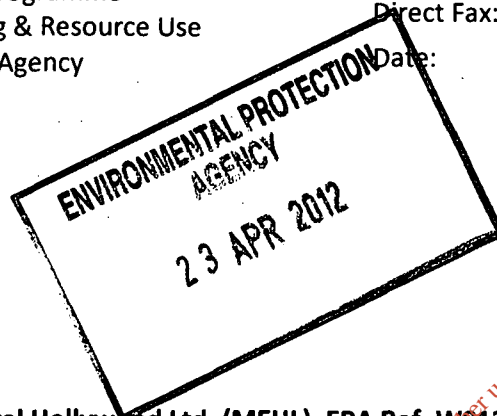


# Murphy Environmental Hollywood Ltd

Hollywood Great, Nag's Head, Naul, County Dublin  
T: 01-8433744 F: 01-8433747 W: www.mehl.ie  
EPA Waste Licence W0129-02

For the Attention of  
Administration  
Environmental Licensing Programme  
Office of Climate, Licensing & Resource Use  
Environmental Protection Agency  
Headquarters  
PO Box 3000  
Johnstown Castle Estate  
Co. Wexford

Our Ref.: W0129-03/Art16\_190412  
Direct Dial: 01 8433744  
Direct Fax: 01 8433747  
Date: 19<sup>th</sup> April 2012



Dear Mr. Meaney,

Re.: Murphy Environmental Hollywood Ltd. (MEHL), EPA Ref. **W0129-03**  
Request for Clarification: EPA Correspondence of 23<sup>rd</sup> March 2012 - Notice in accordance with Article 16(1) of the Waste Management (Licensing) Regulations

I refer to your letter of 23<sup>rd</sup> March 2012 and seek clarification regarding the following items as detailed in your request for further information, particulars and evidence follows (EPA text is included as ***Bold Italics***).

***8.1. Where both Namurian and Loughshinny bedrock exist, well pairs are needed (comprising one well screened in Namurian and one in the Loughshinny Formations). Where one suitable well already exists the second can be installed close to it (within 5m).***

***8.2. Such well pairs are expected to be needed within each of four fault blocks created by the N-S fault and E-W fault that transect the site, allowing better assessment of groundwater flow across fault structures and between the Namurian and Loughshinny, and consideration of potential flow along fault zones during pump testing. As the proposed hazardous waste cell is located across all fault blocks and in an area where both formations exist (Namurian over Loughshinny), this will be the likely main area of focus.***

It is intended to meet this requirement with the installation of additional monitoring boreholes in close proximity (i.e. within 5m) to the existing boreholes; BH-16, BH-11A, BH-14 and BH-18. The additional boreholes at BH-16 and BH-11 will collar in the Namurian and are targeted to bottom out in the Loughshinny. Both of these additional boreholes will be drilled to a depth of 60m. The additional borehole at BH-18 will be completed at a depth of 10m and that close to BH-14 to a depth of 20m. The additional boreholes close to BH-18 and BH-14 will collar in and be completed in the Namurian.

Please also refer to Item 8.4 below.



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**8.3. There is also a need for good well data for the proposed non-hazardous waste cells and new inert cell. In some of the southern area (southwest quadrant) there appears to be insufficient well points, although, as only the Loughshinny is present only single well points are needed. Where it cannot be demonstrated to the EPA's satisfaction that suitable monitoring wells already exist then additional ones are needed.**

It is proposed to locate a new pumping well in the area of the non-hazardous waste cells, which will collar in and be completed in the Loughshinny Formation. The pumping well will meet the requirement for an additional data point within the non-hazardous waste cells.

**8.4. Because pump test data may suggest flow along the fault zone (from our review) there is a need to have a well pair at the north end of the proposed hazardous waste cell on the line of the main N-S fault zone.**

It is planned to drill a single deep borehole at the north end along the line of the fault to a depth of 90m. In the event that the Loughshinny Formation is encountered (which is not thought likely at this time, please see accompanying cross-section in **Figure 1**, Page 4) the borehole will be fitted with a deep (85m depth) piezometer within the Loughshinny and a shallower (30m depth) piezometer located in the Namurian. In the event that the Loughshinny is not encountered above 90m, the borehole will finish at this depth and will be fitted with the two piezometers, one at 85m and one at 30m, but in this case both will be located in the Namurian.

In the event that the Namurian is not encountered in the north of the site along the line of the fault, then a similar position may occur at the planned boreholes in close proximity to boreholes BH-16 and BH-11A. In the event that the Loughshinny Formation is not encountered above 60m at these locations, then these boreholes will be fitted with piezometers located at c.59m depth. In this case the piezometers at BH-16, BH-11A and the two additional boreholes will all be located in the Namurian.

It is hoped of course that the Loughshinny will be encountered in the above additional boreholes. However, it would not be financially possible to commit to continuing the wells to some uncertain depth in the hope of encountering the Loughshinny Formation in the northern part of the site. It is suggested that the presence of in excess of 60m of Namurian strata beneath this part of the site affords a high degree of protection to the underlying Loughshinny Formation.

**8.5. As part of preparation for the additional investigation programme consideration should be given to the benefit of undertaking coring of certain boreholes and downhole geophysical logging to maximise understanding of lithology, fracture distribution and orientation, etc.**

Consideration was given to the geophysical logging of monitoring boreholes during the earlier 2010 investigations. However, the friable nature of the shale rock precluded the safe use of logging sondes in the open holes. The installation of narrow pipes within the wider holes to monitor groundwater levels



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precluded the use of geophysical sondes in the finished boreholes. It is not therefore planned to carry out geophysical logging of the proposed additional boreholes.

A number of boreholes were cored in 2010 to assist in the identification of the various formations found at the Hollywood site, particularly the shaley formations above the Loughshinny. It is not planned to core any of the proposed additional boreholes, as the Loughshinny is readily distinguishable from the more shale-dominated Namurian formations by the presence of limestone bands.

### **8.6. A 7-day pump test and associated step test and recovery test should be carried out.**

As detailed above in Item 8.3 it is proposed to install a new pumping well in the south west of the site within the area of the non-hazardous waste cells. The new pumping well will collar in and be completed within the Loughshinny Formation. Locating the new pumping well within the outcrop area of the Loughshinny Formation meets the Agency's requirement that the planned pumping test draws groundwater only from the Loughshinny Formation.

I would appreciate an early response to the above clarification as the quantum of works required to address the Agency's request for additional information will be difficult to achieve in the allotted 12 week period.

If you have any further queries in relation to this matter please do not hesitate to contact me at 01-8433744.

Yours sincerely,

Patricia Rooney  
Director & General Manager, MEHL

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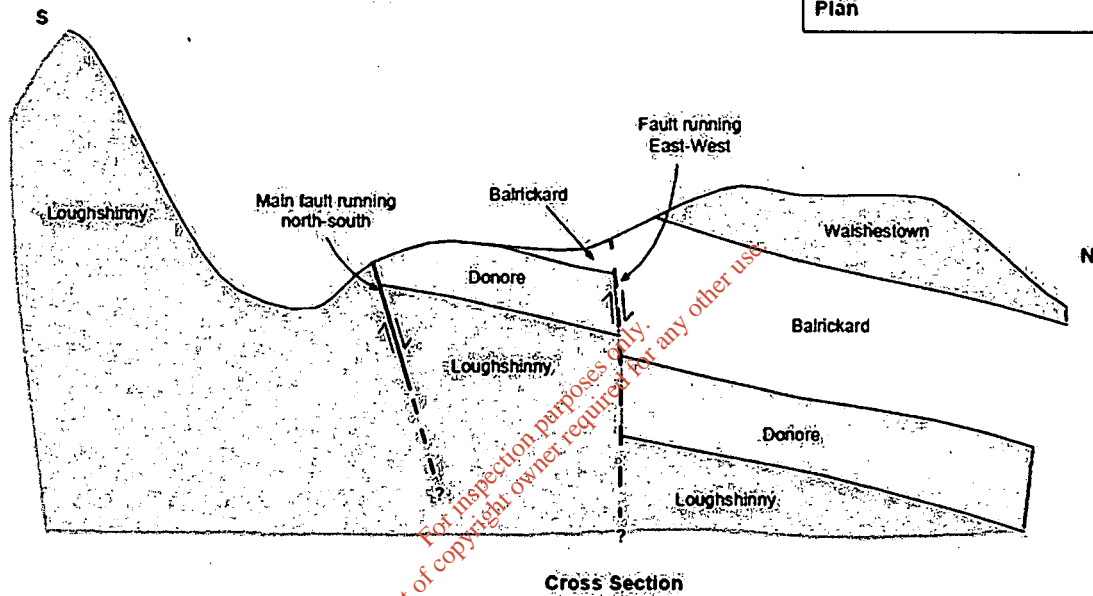
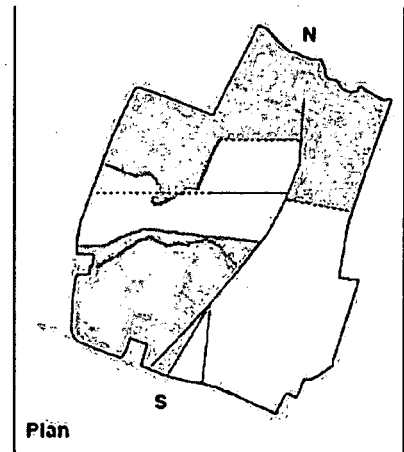


Figure 1: Indicative North-South Cross-section (as per EIS Figure 14.7 (Arup, Dec. 2010))