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17/07/2012

Ms. Maire Buckley,
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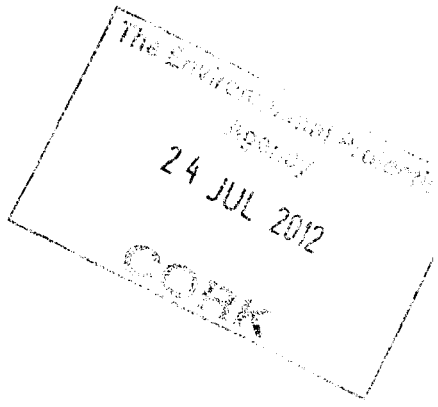

Re: Waste Management (Licensing) Regulations
Applicant: Bord Gais Eireann
Location: Bord Gais Eireann, Gasworks, Dock Road, Limerick.

Dear Madam,

I wish to confirm receipt of the above application dated 23rd May 2012. The E.I.S. accompanying the proposal has been the subject of detailed desk study. Site inspection was undertaken on 16th July 2012.

Nature of Proposal

Bord Gais is proposing to remediate the former Limerick Gas Works site to remove existing free phase liquids, generally comprising coal tars as dense non-aqueous phase liquids (DNAPL). These are present within underground tanks on site, in the former quarry (on site) and in the deep limestone overburden. It is proposed that a "pump and treat" technology will be deployed in Phase 1 of the project. Phase 2 of the remediation works will involve stabilisation/solidification of the upper 3 metres of made ground across the entire site.

Site Location

The site is located south west of the town centre and approximately 100 metres south east of the River Shannon and immediately south east of the Dock Road. Its location is noted to be in an area of mixed use. Housing and light industry are present to the northeast with housing predominant to southeast and southwest. Commercial properties are noted to the northwest. Beyond this are a Graving Dock, Wet Dock and the River Shannon. The River Shannon flows westwards, towards the Atlantic. The site itself is derelict and contains remnants of the former gasworks.

Proposed Impacts

The remediation of the site will have significant impacts on a wide cross section of people living, visiting, frequenting, accessing or working in the general community. It will also impact directly on personnel working on the site remediation for the duration of the project. This office has identified potential impacts in respect of dust, odour, noise, vibration, traffic and groundwater contamination arising from the proposed remediation works. E.I.S. has identified widespread contamination of the site as a result of by-products and waste products deposition resulting from former gasworks operation. Contaminants mainly comprise total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene and xylene (BTEX), polycyclic aromatic hydrocarbons (PAH's), cyanides and heavy metals.

Observations/Recommendations

Proposed impacts which have potential public health and environmental health implications have been examined in the context of the information submitted in the form of E.I.S.

1. Qualitative assessment of the pollution linkages for the site has identified "potentially significant risks to future site users and adjacent premises". Notwithstanding same the E.I.S. does not address the issue of proposed impacts on Human beings in the overall context of the proposal. The direct and indirect impacts on human health arising from the proposed remediation process do not warrant discussion, study or evaluation under the provisions of E.I.S. This is a significant omission since the prediction of impacts on human health issues is fundamentally linked to protection of public health, whether through on site mitigation measures, or other environmental controls. In the circumstances, applicant should be requested to highlight and address the direct and indirect effects on human health, identify sensitive receptors (including sub population groups such as children, elderly or immunocompromised persons) and as appropriate, quantify such effects along with outlining site specific mitigation measures.

2. Minimal/inadequate evidence is provided in E.I.S. to indicate that applicants have engaged in a meaningful, effective or comprehensive manner through discourse or consultation with the wider community surrounding the site. "Distribution of information flyers has been restricted to the immediate vicinity to date, as impact was minimal".

   It is noted that the site is located directly adjacent to and in close proximity to residential housing, rented accommodation and commercial properties. Workers employed in the Dock Road area; shoppers, general public and particularly residents of the surrounding community will be directly and indirectly affected by this proposal yet no consultation with the wider community has taken place. In

the absence of proper and comprehensive public consultation the concerns of residents, neighbouring communities, property owners and other sensitive receptors have not been identified or addressed and this is deemed to be a significant oversight.

3. Concern is raised with regard to the absence of site specific, measurable detail/information in the E.I.S. with regard to the proposal. It is evident that the final specification/method statement for proposed site remediation has not been agreed or formulated. "The preferred option is pump and treat technology. A full specification of works will be prepared following detailed design of remediation works in consultation with regulators and specialist contractors".

In the absence of detailed design specification for the proposed remediation process it is not possible to predict environmental/public health impacts or to outline effective and comprehensive mitigation measures. In such a context it is deemed that the E.I.S. submitted is fundamentally flawed. In the absence of such critical detail it is not possible to comprehensively assess the E.I.S. or to properly evaluate potential impacts/mitigation measures.

- It is recommended that a revised E.I.S. is submitted which addresses the above omissions and which provides detailed consideration and a comprehensive method statement for proposed site remediation techniques and processes.

- All potential impacts arising from the remediation/on site construction process need to be identified and quantified in the context of sensitive receptors/at risk community.

- Mitigation measures which adequately and comprehensively address identified impacts need to be outlined.

4. The E.I.S. as submitted "estimates" that 200 m^3 of DNAPL will be removed and re-cycle/disposed of. Clarification is sought as to how such estimate was quantified.

5. E.I.S. states that "an estimated 32,500 m^3 of material will require stabilisation/solidification as part of Phase 2 of the remediation works. Clarification is sought as to how such estimate was quantified.

There is no evidence in E.I.S. to indicate that detailed geotechnical ground investigations/study have been undertaken on site that would provide comprehensive and accurate quantitave assessment of the total area and depth of contaminated lands which will require remediation.

6. The submitted Water Quality and Hydrogeological report is deemed to be inadequate and inconclusive. It is not sufficient to say that "there are no recorded active wells or boreholes in the vicinity of the site". It should be noted that the site is located on the southern side of the River Shannon. The site wide presence of hydrocarbons, PAH's, cyanide, ammonium, copper and selenium pose a potential risk to waters. Initial groundwater assessment identified potentially significant risks to River Shannon and the on-site limestone aquifer by the presence of benzene, phenol, ammonium, hydrocarbons and aromatic hydrocarbons. Notwithstanding same no detailed hydrogeological risk assessment has been completed on the potential impacts of the remediation process on groundwater sources or River Shannon. Clarification is sought as to whether any drinking water abstraction points are located on the River Shannon downstream of the proposed development site. i.e. West of Gas Works site.

7. E.I.S. specifies that a proposed pump and treat technology will be deployed for the purpose of site remediation. It also acknowledges that the site exhibits widespread contamination and that DNAPL removal will be the subject of specialist proprietary techniques. This process by virtue of the release of Volatile Organic Compounds (VOC) gives rise to odours. Odour emissions are also generated during the stabilisation/solidification stage as a result of the mixing process. Notwithstanding the above the E.I.S. concludes that "odour emissions are not anticipated to be significant". In the absence of site specific "pump and treat" method statement it is not possible to accurately predict that odour will not be "significant". As a minimum control, an Odour Abatement/Odour Management Plan should be developed as part of E.I.S. given the close proximity of the development site to residential and commercial properties.

8. It is acknowledged that remediation of the site will involve disturbance of soil that will be contaminated with various hydrocarbon compounds. Once exposed to the atmosphere, easily volatised compounds such as VOC's are in danger of being released into the local environment. Site works may generate dust which along with being a nuisance may contain pollutants which are harmful to health. The E.I.S. does not undertake any form of predictive modelling on the possible impacts of dust on the local community. Current baseline dust deposition results for the site are meaningless in the context of proposed site remediation. The health effects of contaminated dust on the local environment have not been addressed and this is deemed to be a significant omission.

9. Similarly with Noise, baseline data is presented but no specific impact prediction, evaluation, study or identification of mitigation measures relative to proposed site operations is presented and it is deemed that proposed Noise impacts of the project have not been satisfactorily addressed.

Yours faithfully,

James Cahill,
Senior Environmental Health Officer

Agreed:

Andrew Curtin,
A/Principal Environmental Health Officer