

Please refer to file for copy of submissions

This Report/Memo has been cleared for submission to the Board by the Programme Manager,

P. Nolan

Signed: *SG*

Date: *5/7/05*



OFFICE OF LICENSING & GUIDANCE

INSPECTORS REPORT ON A LICENCE APPLICATION

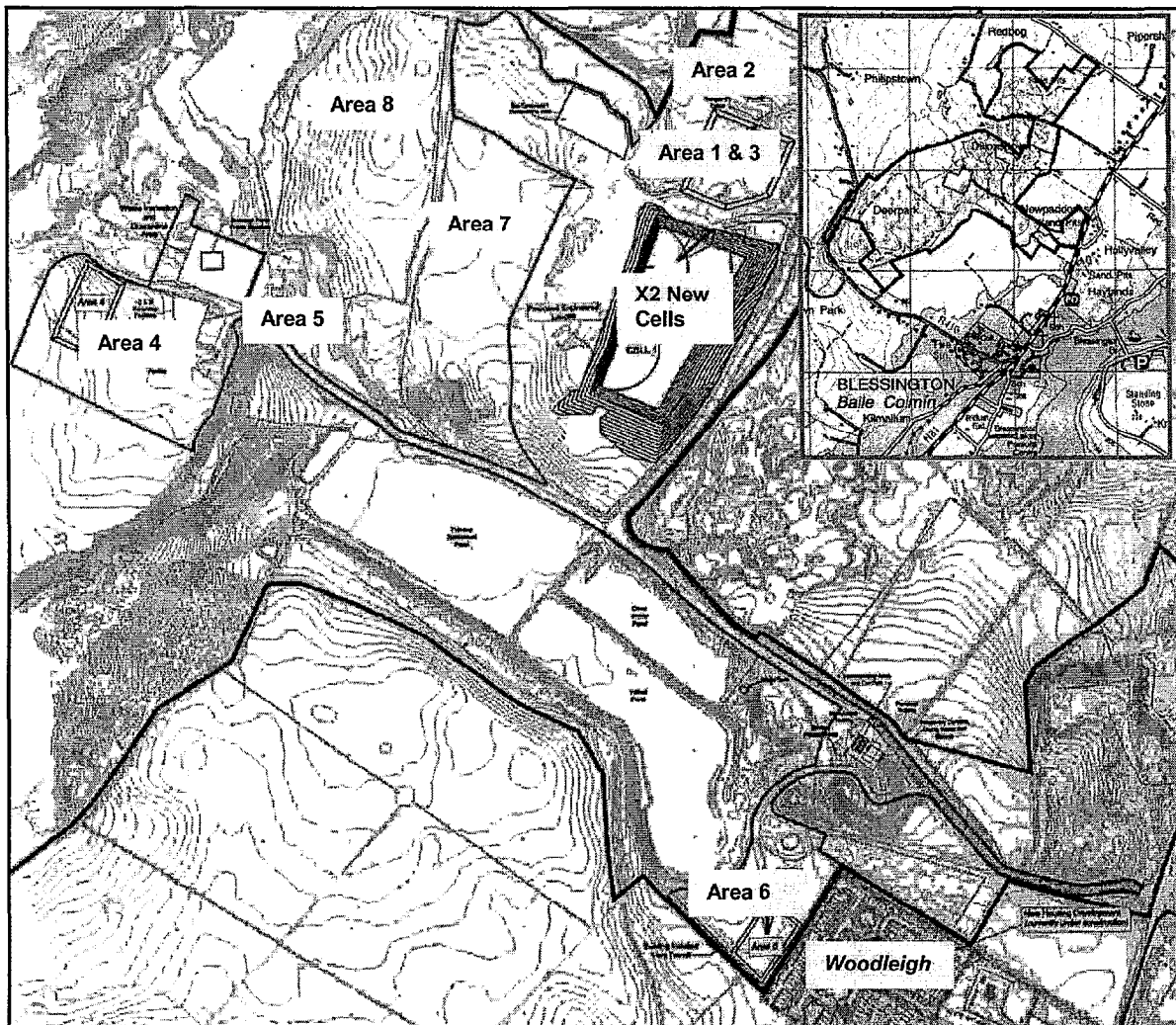
To:	DIRECTORS	
From:	MALCOLM DOAK	LICENSING UNIT
Date:	5 JULY 2005	
RE:	APPLICATION FOR A WASTE LICENCE FROM ROADSTONE DUBLIN LIMITED, LICENCE REGISTER 213-1 , ROADSTONE DUBLIN REMEDIATION LANDFILL.	

Type of facility:	Landfill for Non-Hazardous Waste and Remediation of Illegal Waste Deposits
Class(es) of Activity (P = principal activity):	3 rd Schedule: 1(P), 5,13. 4 th Schedule: 4, 10, 13.
Quantity of waste to be landfilled:	180,000 T (applicant's estimate received on 30 May 2005)
Types of Waste:	Mixed construction, commercial and municipal wastes
Location of facility:	Dillonsdown, Deerpark, Newpaddocks and Santryhill Townlands, Blessington, Co Wicklow
Licence application received:	7 December 2004
No. of Third Party submissions:	21
EIS Required:	An EIS was submitted to the EPA with the application. I have examined and assessed the EIS and am satisfied that it complies with the requirements of the EIA and Licensing Regulations.
Article 14 compliance date:	3 June 2005
Site Inspection:	18 January 2005, Malcolm Doak.

1 Facility

This waste licence application is for activities associated with the cleanup of unauthorised landfill of approximately 180,000 tonnes (applicant's estimate) of mixed construction, commercial and municipal wastes at three areas (Areas 1, 4 and 6) within Roadstone Dublin's landholding, north of Blessington, Co. Wicklow. The plan extent of the company's landholding is outlined in blue (as inset, 267 hectares) in Figure 1. For the purposes of the Waste Licence Application, the 'Application Area' comprises the three areas where unauthorised waste was uncovered, the site of the proposed remediation landfill, and the interlinking road network. A number of other sand and gravel companies operate from sites adjacent to the Roadstone Dublin landholding. These include J.W Carnegie and Co. to the north-west (Waste Licence 80-1) and Hudson Brothers to the east.

FIGURE 1 Application Area and Facility Infrastructure Layout:



The site investigation history of the area of waste tipping is as follows:

Phase 1 Investigation, Wicklow County Council (WCC) - WCC investigated the Dillonsdown, Deerpark and Newpaddocks areas of the site between 17 December 2002 and 25 February 2003. The site investigation comprised the excavation of large trial pits to depths in excess of 15m, in eight separate areas (Areas 1-8).

Phase 2 Investigation, Roadstone Dublin Ltd. WCC appointed Komex Hydrogeological consultants to observe the Phase 2 investigation on their behalf.

Investigations were carried out between 13 February and 14 March 2003 and focussed on Area 1 at Dillonsdown, Area 4 at Deerpark and Area 6 at Newpaddocks, where significant quantities of mixed waste had been identified in the Phase 1 investigation. The Phase 2 investigations comprised the drilling and installation of:

- 12 groundwater/gas monitoring wells (4 in each area);
- 11 cable percussive boreholes for the additional investigation of the waste bodies (five in Area 1 and three in each of Areas 4 and 6).
- chemical testing of soil and water samples, including analysis for fraction organic carbon (foc) and a number of leaching tests.
- pumping tests on selected boreholes;
- measurement of river flow;
- groundwater and gas monitoring April and May 2003.

As a result of the Phase 2 investigations the applicant specifies the remediation strategy for the unauthorised landfill sites (in the Quantitative Risk Assessment and the EIS) as:

- the excavation and removal of the buried waste from Areas 1, 4 and 6 only;
- construction of sumps in advance of the excavation works to facilitate collection and extraction of any residual leachate;
- processing of the excavated waste by segregation, trommeling, screening and recycling at Area 4 to the west, and the transport of arising hazardous waste off-site to licensed facilities;
- transfer of the residual non-hazardous waste to a remediation landfill consisting of two lined cells of 180,000T capacity within the existing landholding at Area 1. *Note the applicant specifies the landfill cells will ONLY be used for the remediation of unauthorised landfills on this site and no importation of waste will be permitted under any circumstances;*
- Waste excavation, removal, transfer, landfilling and processing to be undertaken between 07.30 hours and 17.30 hours Monday to Friday and 08.00 hours to 13.00 hours on Saturdays. No works will be undertaken on Sundays or public holidays.

The proposed weight of waste to be removed to the engineered landfill cells was reported to the Agency on 30 May 2005 as a maximum projected tonnage of 180,000 tonnes of mixed waste.

It is recommended that the application for a waste licence, namely the provision of a lined landfill, be refused for the reasons outlined below:

- **Groundwater Protection Response**
- **Waste Quantities and Alternative Sites Considered**
- **Waste Licence Application Area**
- **Existing Landfill Gas at Area 6**
- **Minister of Environment Policy Direction (Section 60 WMAs)**
- **Submissions received from Third parties.**

2 Groundwater Protection Response

2.1 Existing Illegal Waste Areas and Applicant's Calculations

The groundwater table across the site can be relatively deep based on applicant's data collected during May 2003. The depth to groundwater for each waste area is:

1 – 21m,
4 – 8.5m, and
6 – 19m.

Waste has generally been placed on low permeability material generated from sand and gravel washing operations, which has allowed perched water to develop within the waste bodies. Hence a relatively deep unsaturated zone occurs below each waste body at Areas 1, 4 and 6 viz. depths of 4.1m, 2.4m and 12.4m respectively. The perched water in each waste body is contaminated by:

- Area 1: elevated levels of major ions, iron, manganese, fluoride, ammonia and nitrite, certain heavy metals, petroleum hydrocarbons, phenols, and PAHs;
- Area 4: elevated potassium, iron, manganese, fluoride, ammonia, phosphate, certain heavy metals, petroleum hydrocarbons, minor PAH detection and no volatile or semi volatile organic compounds;
- Area 6: elevated major ions, iron, manganese, fluoride, ammonia, phosphate, certain heavy metals and metalloids, petroleum hydrocarbons, phenols and a wide range of volatile organic compounds.

The presence of dissolved iron, manganese and ammonia at all bodies suggests reducing conditions in parts of the waste. The applicant notes the unsaturated zone presents an opportunity for natural attenuation of contamination before it reaches the groundwater table since most notably the organic compounds detected in the perched water in Areas 1 and 6 were generally not detected in the groundwater. Currently the unsaturated zone is therefore likely to be providing effective protection to the underlying groundwater, although in my view, only if the waste bodies and associated perched waters are left undisturbed. Without the initial removal of perched water I am concerned that on waste excavation there may be a release of sudden plug(s) of contaminated perched water, which may impact or 'shock' the underlying groundwater quality, and have unknown consequence on the aquifer water resource.

At Roadstone the most sensitive pollutant linkages are as follows:

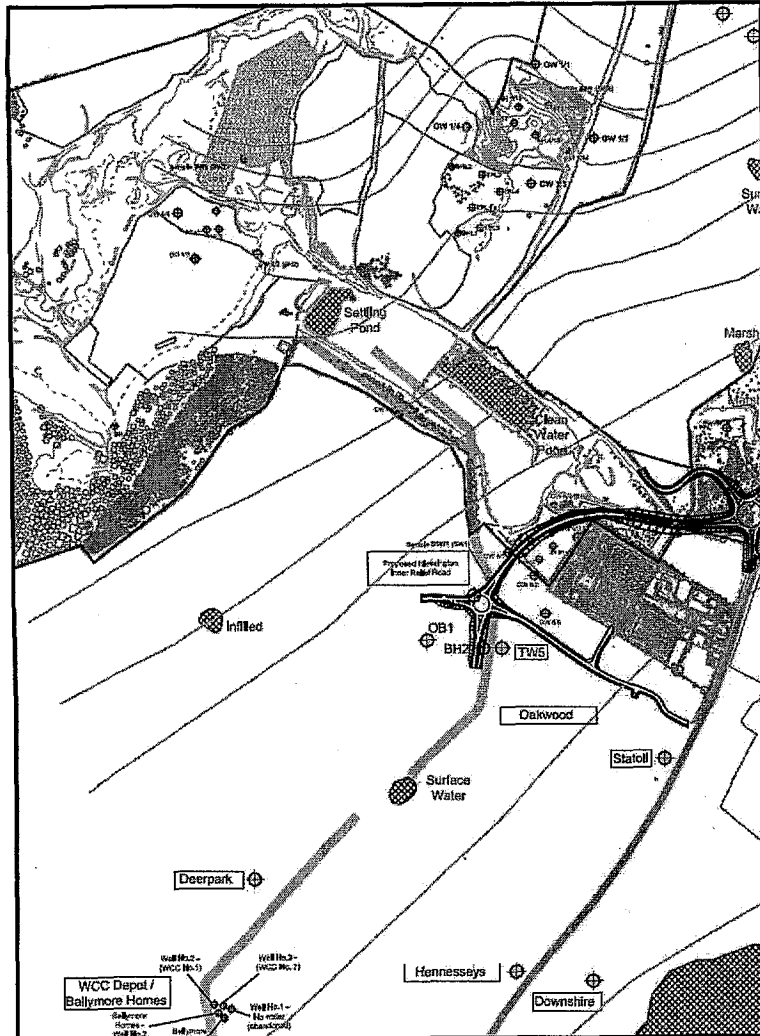
- leaching from waste in Areas 1 and 4, through the unsaturated zone, into the under-lying groundwater and migrating in the groundwater to the River Burgess;
- leaching from waste in Area 6, through the unsaturated zone, into the underlying groundwater and migrating in the groundwater to several drinking water abstraction wells in Blessington.

It is these linkages which have been the focus of the groundwater risk assessment which indicates that only phosphorous, strontium, nickel, and zinc may arise at any downgradient wells as contaminants.

Only after Agency intervention did the applicant assess the impacts the existing waste bodies are having/will have on the numerous wells in Blessington village even once the waste is removed. Information supplied on 31 May 2005 shows that all

abstraction wells in Blessington village lie downgradient/cross-gradient of the Roadstone facility, as indicated in Figure 2:

Figure 2: Groundwater Contour Plan of unconfined aquifer showing groundwater flow from Roadstone is south/southeast to the WCC wellfield and Pollaphuca Reservoir. 25 May 2005 drawing.



An estimate of the breakthrough times (the time at which contaminants are likely to reach a given receptor at concentrations above zero level), and any likely impact to the abstraction wells at the county council depot was also calculated. The results presented in the table below shows the breakthrough times for contaminants to the Wicklow County Council wells is relatively long, at >54 years, in the opinion of the applicant's consultants:

Table 9: Breakthrough Travel Times from Area 6 to WCC Well

Contaminant	Area 6 to WCC Well	
	Days	Years
Sulphide	19548	53.6
NH4 as N	19548	53.6
Aromatics 8 - 10	1069456	2930.0
Aromatics 10 - 12	145566080000	4615.9
Aromatics 12 - 16	3341473	9154.7
Aromatics 16 - 21	10524396	28834
SO4	19548	53.6
Barium	19548	53.6
Fluoride	19548	53.6
Nitrite	19548	53.6
Chloride	19548	53.6
Benzene	58577	160.5
Naphthalene	1341519	3675.4
Pyrene	25218924	69092.9

A review of three particular aspects of the hydrogeology which have been incorporated into the modelling and hence into the risk assessment was undertaken by this Inspector, guided by several publications, particularly the Geological Survey of Ireland (GSI) *Groundwater Protection Scheme for Wicklow Co Co* (March 2003) and various quarterly *Groundwater Newsletter* articles all authored by Mr Geoff Wright, Senior Hydrogeologist, GSI, which detail aquifer gravel parameters common to Irish glacial deposits:

- Assumed values for hydraulic conductivity (or permeability, k) of the gravel aquifer;
- Assumed values for storativity (specific yield) in the gravel aquifer;
- Assumed values for annual infiltration (recharge) into the gravel aquifer.

The applicant's Quantitative Risk Assessment (QRA) in Appendix 6A of the EIS determined a 'k' value of 1×10^{-5} m/sec or 0.864 m/day for the underlying gravels yet the GSI cites values of 0.864 to 864 m/d for "coarser, water-sorted glacial materials", such as are the Blessington deposits. The GSI's *Groundwater Source Protection Report for the Blessington Gravel Aquifer* (part of the Co. Wicklow Groundwater Protection Scheme) documents two pumping tests in boreholes PW1 and PW2 at the Council depot. PW1 was tested at 455 m³/d for 72 hours. PW2 was tested at 305 m³/d for 72 hours. From these data, it is clear that the Blessington sand and gravel aquifer has a high permeability and transmissivity, at least in places. PW1 showed a 'k' value of approximately 7 m/d.

Storage values ranging from 0.1% to 1% were used in the QRA yet *Fetter* (Applied Hydrogeology, 3rd Ed, 1994, page 118) specifies 'Storativity of unconfined aquifers ranges from 0.02 to 0.30' (i.e. 2% to 30%), and *Davis and De Wiest* (Hydrogeology, 1966, page 376) record 'Gravels and coarse sands have values typically greater than 20 per cent'. I suggest that a specific yield of 10% and 20% is used in any future modelling at Blessington.

Section 3.5.9 of the QRA report gives the estimated infiltration to the site as 110 mm/year, based on 10% of the mean annual precipitation at Blessington Garda Station (1951-80). There is no justification for basing an annual infiltration (recharge) estimate on such a gross value. In the case of Blessington, the GSI estimate that c. 370mm of rainfall per year will infiltrate (GSI Source Protection Report - Blessington). Accordingly, the recharge figures of the QRA are not correct and in my

opinion this invalidates the QRA and the 'breakthrough' figures of above. The recharge error alone probably means the breakthrough times are too conservative and should be at least halved (*i.e.* chloride will decrease from 53.6 yrs to ~ 27yrs).

I am concerned that values of the several key hydrogeological parameters are not those of Irish glacial gravel aquifer deposits, as specified by the GSI in their publications. The errors identified as above puts a flaw on the QRA and hence I am unable to accept the applicant's conclusions that the Co Co wells are not at risk from pollution arising from the Roadstone lands and illegal waste areas.

2.2 Development of New Landfill Cells on the Blessington Aquifer

Effectively there is no surface water system at the Roadstone facility since the entire lands consist of sand and gravel quarries. Any recharge or runoff from site buildings, yards, landfill leakage *etc* would percolate vertically to the groundwater table which lies at a depth of c.8.5m in the sand & gravel aquifer. The priority at gravel landfill sites is the protection of groundwater by controlling direct and indirect emissions to groundwater either by utilising natural geological clay (barrier) layers, or specifying groundwater control measures, or requiring the construction of clay intervals directly below the landfill liner, or the refusal of landfill, - depending on the sensitivity of the groundwater, aquifer extent and public usage of the groundwater reserves.

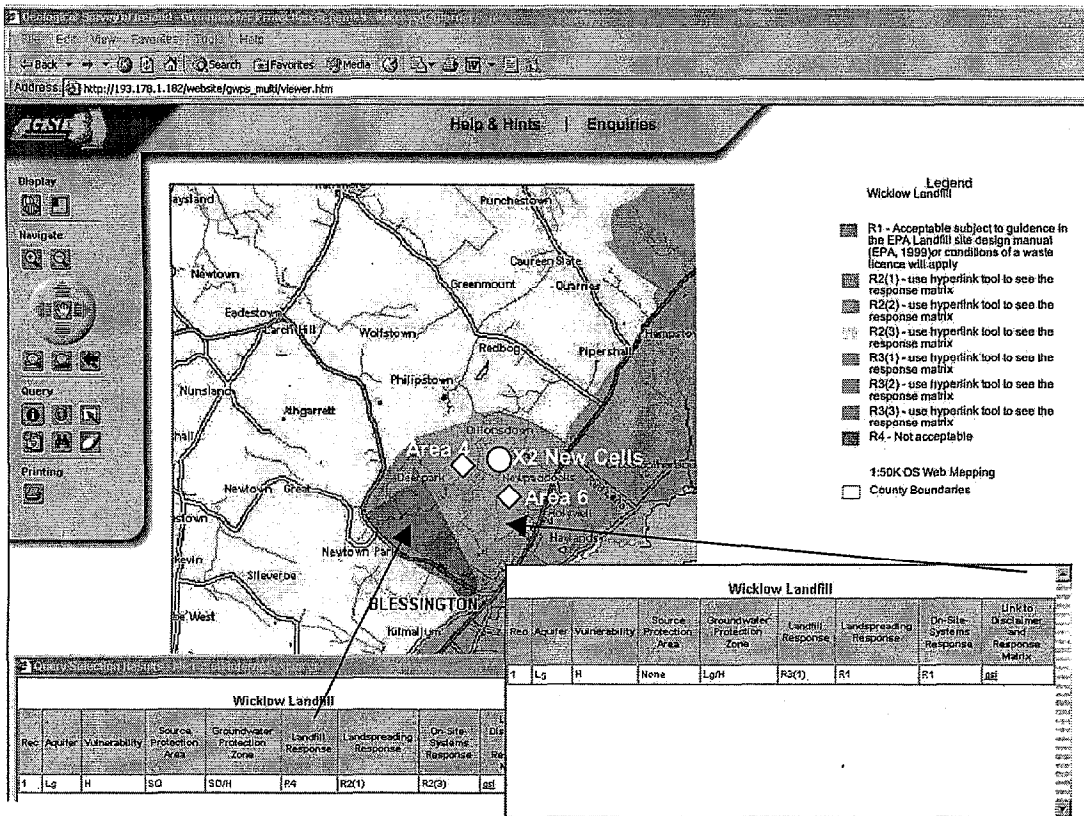
The GSI report¹ and GSI correspondence with the applicant specifies that the Roadstone landholding lies on a **locally important gravel aquifer** with a **high vulnerability**. Further, the GSI has applied a GSI/DOELG/EPA landfill matrix response of **R3**¹ to the entire Blessington Aquifer (see Figure 3), which determines that the siting of a landfill is not generally acceptable unless it can be shown:

- **that the groundwater is confined; or,**
- **there will be no significant impact on the groundwater; and**
- **it is not practicable to find a site in a lower risk area.**

Wicklow County Council records show that there are currently six large groundwater abstraction wells either in constant use or occasionally pumped, which supply all of Blessington village with its drinking water needs. Current abstraction rates for the Wicklow County Council wells is 26m³/hr or approximately 230,000m³/year, and a combination of others supplies a further 18m³/hr (160,000m³/year) to the population. The closest abstraction well (single domestic use) down gradient is the 'Murphy House' well situated at approximately 592m south east of Area 1. The 'Deerpark' wells are situated at a distance of 750m south west of Area 6. The wells in the Wicklow County Council yard lie 1160m south west of Area 6, for which the GSI has designated the council depot wellfield as a 'source protection zone' resulting in a large zone of contribution (ZOC) of 1.2km² as per Figure 3 (at 40m³/hr) and an arising **R4** matrix response.

¹ Blessington Gravel Aquifer – Groundwater Potential and Vulnerability, November 2001. GSI.

Figure 3: Capture of GSI web map server showing the groundwater matrix response scores of R3¹ for the Blessington Aquifer (light red ~9km²) and R4 for the WCC wellfield source protection area (dark red ~1.2km²).



Section 5 (1) of the WMAs 1996-2003 defines *environmental pollution* as follows: 'environmental pollution means, in relation to waste, the holding, transport, recovery or disposal of waste in a manner which would, to a significant extent, endanger human health or harm the environment, and in particular:

- Create a risk to waters, the atmosphere, land soil, plants or animals,
- Create a nuisance through noise, odours or litter, or
- Adversely affect the countryside or places of special interest'

Section 40(4)(b) of the WMAs provides, *inter alia*, that a waste licence shall not be granted unless the activity concerned, and carried out in accordance with such conditions as may be attached to the licence, will not cause environmental pollution. My view, based on my professional hydrogeological experience and having examined all the information submitted by all parties, is that the risk of the proposed landfill site and its leachate leakage to the locally important aquifer, the Blessington ZOC, and groundwaters as above would constitute environmental pollution.

Further, a review of the GSI *Groundwater Protection Scheme for Wicklow Co Co* (March 2003) shows that of the eight sand and gravel aquifers identified on Co Wicklow, the Blessington Aquifer is by far the biggest at 9km² with thickness of 10 - 12m. In the same publication, the GSI sets out the rationale for aquifer classification, observing that a gravel *Regional Aquifer* requires an areal extent of 10km² and a recharge (rainfall) of one million m³ of water per year. Having regard to the principle of precaution (c.f. Section 52(2)(b) of the EPA Act 1992), and having regard to the

100% dependency of Blessington village on groundwater for drinking water, the high levels of abstraction (c. 500,000m³/year), the large ZOC for the Co. Co. wellfields, the groundwater contours and applicant breakthrough times, I consider that the whole Blessington Aquifer should be designated and given a GSI/DOELG/EPA matrix response of **R4**. No Landfills shall be developed on aquifers with such a rating.

Overall, the requirements of the GSI/DOELG/EPA matrix response of **R3**¹ have not been met since the groundwater is unconfined, a future significant impact on the groundwater quality at Blessington cannot be discounted, and the **R4** ZOC for the Blessington wellfield lies directly in the path of and down/cross gradient of the proposed landfill cells. Further the applicant has not proved that it is not practicable to find a site in a lower risk area as per Section 3 of this report, next.

Consequently as a result of the risks to the underlying aquifer and its **R3**¹ to **R4** rating I recommend the refusal of the landfill activity, and this being the principal activity applied for, recommend rejection of the application, and hence recommend the refusal of a waste licence to Roadstone.

3 Waste Quantities and Alternative Sites Considered

3.1 Waste Tonnages for Disposal and EU Law

The proposed weight of mixed waste to be removed to the engineered landfill cells for disposal was reported to the Agency on 30 May 2005 as the following:

- (i) buried construction, commercial and municipal wastes (52,300 tonnes);
- (ii) soil intermixed with waste and immediately surrounding it (101,600 tonnes);
- (iii) residual, non-recoverable C&D waste (11,000 tonnes); and
- (iv) a contingency allowance of 10% of the total.

This yields a maximum projected tonnage of 180,000 tonnes disposal to the two proposed engineered landfill cells.

I have difficulty with the above total tonnage disposal figure of 180,000T, namely the item under (ii) of 101,600T. The applicant assumes on the basis of visual observations only on site during the environmental investigations that approximately 56% of the overall waste body comprises intermixed soil (waste and soil) of 23,250 m³ and soil in contact with the waste body of 33,200m³ (soil contaminated by the holding of the waste). If it is assumed that the average density of this soil is 1.8 tonnes/m³, the corresponding weight is 101,600 tonnes.

The 101,600 T disposal to landfill is a major obstacle in my view, since much of the material can and should be treated and sorted for recovery prior to disposal. Only the residual waste (residues or other waste that is unsuitable for recycling) at Roadstone should be diverted to landfill. I find no European or EPA guidance document which specifies the term *intermixed waste/soil in contact waste*. In my view the *intermixed waste/soil in contact with waste* is primarily an inert/aggregate/C&D waste. BAT for the handling of such waste is its treatment to produce secondary aggregates for re-use on road projects or as granular fill. National and EU law/guidance requires this:

- Recital (3) of the EU Landfill Directive specifies landfilling is the least favoured option of the waste hierarchy: *Whereas the prevention, recycling and recovery of waste should be encouraged as should the use of recovered materials and energy so as to safeguard natural resources and obviate wasteful use of land*;

- Article 6 (a) of the Landfill Directive specifies only waste that has been subject to treatment shall be landfilled;
- EU Commission working group (June 1999) on Construction and Demolition Waste (C+DW) considered that landfilling of C+DW should be actively discouraged by Member States;
- New CEN standards accept secondary/recycled materials on an equal basis with natural aggregates, hence opening the door for a standardised recovery process to occur across Europe and at the applicant site;
- Construction and Demolition Waste Management – A Handbook for Contractors & Site Managers (FAS/CIF 2002), specifies C&D Waste volumes be diverted from landfill to recycling C&D waste ventures.

It is essential that this aspect of the waste tonnage be clarified since it has a huge bearing overall on the proposal to dispose and landfill. My assessment is that the waste for disposal at Roadstone should be based on factual estimates which items (i) and (iii) list with a contingency in (iv) (totalling c.69,500T). The 101,600T disposal estimate for item (ii) is ambiguous – much of this can and should be recovered onsite for aggregate, using trommelling, crushing and gravel washing. Overall my opinion is that the figures for disposal should be far less than the 180,000T as applied for. Hence this questions the requirement for the transfer of the waste to an on-site landfill with two cells.

It is my view the revised tonnage for disposal can be handled by several licensed facilities off-site in the Wicklow and Leinster regions negating the need for the emplacement of a new landfill on an aquifer of such strategic importance and of substantial groundwater supply. A waste licence would be required for the recovery and treatment of the illegal wastes onsite and the export off-site of the residual for disposal.

3.2 Alternatives Considered

As well as the other groundwater matters discussed in Section 2 of this report, the GSI matrix score of R3¹ for the entire Blessington Aquifer determines that the siting of a landfill is not generally acceptable unless it can be shown that it is not practicable to find a site in a lower risk area.

The applicant (Section 1.7 EIS) considered alternatives to the principal activity of landfilling on-site by considering the excavation of the buried waste and its transfer via road haulage lorries to a suitably licensed landfill facility, based on a maximum figure of 175,000m³ (c. 263,000T) of intermixed waste. In exploring this option, Roadstone Dublin only looked at the feasibility of transferring this tonnage to appropriately licensed facilities within 80km of the application site, concluding that the Dublin/Leinster/Wicklow area could not offer the certainty of accepting the 263,000T. Hence the applicant dismisses that a lower risk alternative site is available. Roadstone Dublin offers in conclusion that it is satisfied that the proposed remediation strategy for the unauthorised landfill sites on its lands by landfilling in cells at Blessington represents the Best Environmental Option Not Entailing Excessive Cost.

I am concerned that the applicant insists on this avenue of disposal onsite, and does so by basing the disposal tonnages on over-inflated tonnages. Further, the applicant has provided the Agency with two figures for disposal of 180,000T or 263,000T. Notwithstanding the conclusions of section 3.1 above that the waste be recovered, I deem the tonnages portrayed by the applicant are flawed and hence I am unable to accept the applicant's conclusions that landfilling must occur on-site in Blessington, rather than off-site at a licensed facility.

4 Waste Licence Application Area

The waste licence application boundary is an irregular polygon (Figure 1 - red line) as proposed by the applicant to incorporate waste activities at the three illegal wastes areas and the construction and operation of the two landfill cells.

The polygon does not provide for any other areas at Roadstone where waste might be uncovered nor the other Areas 2, 3, 5, 7, and 8. The narrow linear aspect of the boundary across the middle of the site is most unusual (it runs west/east between waste between areas 4 and 6 along the haul road). Overall, the irregular shape and dimensions of the waste boundary are not practical.

5 Existing Landfill Gas at Area 6

The applicant states that in mid 2003, Area 6 was producing landfill gas well above the DoEHLG Guidance values (Protection of New Buildings and Occupants from Landfill Gas, Department of the Environment, 1994) and at or above threshold and maximum explosive limit values in some cases. As a result the installation of a gas venting trench between Area 6 and the new housing at *Woodleigh* occurred in late 2003 to include gas venting boreholes. Nine rounds of gas monitoring have occurred up to January 2005.

Methane levels within Area 6 have decreased from considerably above the DoE guideline value of 1% (up to 30%) to zero since the installation of passive venting boreholes in the first part of 2004. However the results for monitoring points A4 – A6 within the waste still show methane levels up to 6%, which are above the guidance level. The methane levels monitored at the edge of Area 6 adjacent to the housing at *Woodleigh* show zero methane which may indicate that no methane is escaping laterally from the site. Further, methane levels measured outside Area 6, (Nov 2004) at *Woodleigh* also show zero methane. From this, the applicant concludes via a risk assessment report that the risk of methane escaping from Area 6 remains very low - the installation of the passive venting boreholes and the vent trench appears beneficial.

However Roadstone remain of the view that relocation of active waste from Area 6 to Area 1 into a designed repository is the preferred solution to this problem and this should occur as soon as possible to minimise the environmental and other impact on local residents.

Notwithstanding the merits of the works carried out, I am concerned about the impacts of any landfill gas arising on waste ageing or indeed after a hot summer. Further, the gas vents and trench were installed as a temporary measure only and the design of individual unconnected wellheads is not for the long term, nor are they sustainable, and they will be difficult to monitor.

Overall in my opinion the houses at *Woodleigh* are too close to the Area 6 illegal waste deposit (<30m), and at a distance to which no risk assessment can be invoked (as far as this inspector is aware).

The link/pathway to the housing must be broken as soon as possible by specifying Area 6 waste removal immediately to an area of lower risk and at a distance from *Woodleigh*, for which the applicant has not applied for, other than specify waste removal to the two new landfill cells which I recommend are refused. In addition, it is

predicted in Section 7 of the EIS that there will be dust and odour impact of greater than 6 odour units in the vicinity of the *Woodleigh* during waste excavation (over a two month period). No mitigation measures for this nuisance aspect has been provided. Indeed a consultant's report received as a submission on 20 June 2005 (as part of the Blessington & District Forum submission (M Sargent & TMS Environment Ltd) specifies the odours at Area 6 on excavation will be more discernable than the EIS states at 1.5 odour units, and states no PM₁₀ levels have been accounted for which in their view is a fundamental parameter for air dispersion modelling. They further query the rationale for not implementing a quantitative risk assessment for landfill gas.

In a similar guise to that discussed in Section 2.2 above, it is my view that the current risk of landfill gas emissions at Area 6 to the residents of *Woodleigh* and the odour nuisance arising from waste excavation (there are no abatement controls proposed) would constitute environmental pollution, and hence a waste licence under Section 40(4)(b) of the WMAs shall not be granted.

6 Minister of Environment Policy Direction (section 60 WMAs)

The Minister's Circular (WIR: 04/05) of 3 May 2005 specifies the aim in all cases of illegal waste activity should be the making safe of the site, including the removal of waste where required as a consequence of a risk based assessment, the removal of hazardous waste where it is detected, and the removal of recyclable material if environmentally sustainable.

Certain sites should at all times be remediated such as:

lands proximate to existing or planned residential development or educational facilities, in which case remediation shall require the removal, in the shortest practicable time, of all waste except only where it is shown that an alternative solution provides greater protection to the environment and the health of the local population.

As per Section 5 of this report, and the proximity of illegal waste at Area 6 to housing at *Woodleigh*, I deem it not appropriate that waste at Area 6 be left *in situ*. Hence by virtue of the Minister's policy, remediation at Area 6 shall require its removal, in the shortest practicable time.

7 Submissions

A total of twenty-one valid submissions were received in relation to this application as per the Table next page. The questions and issues raised in each submission were taken into consideration in the writing of this report and are summarised next page. A refusal of the application for landfill disposal will resolve all those issues relating to the principal activity.

Waste Licence Application Management System

Submissions Report Reg No: 213-1 Roadstone Dublin Remediation Landfill

List No	Name	Address	Organisation	Sub Rcvd
1	Ms Sinead Impey	129 Burgage Manor, Blessington, Co Wicklow,		20/12/2004
2	Mr Ruairi O'hAilin	19 Deepark Close, Blessington, Co Wicklow,		10/01/2005
3	Ms Alison Doyle	5 Woodleigh Way, Blessington, Co Wicklow,		18/01/2005
4	Mr Michael Sargent	c/o Mr Stephen Bray, Environment & Heritage Committee, 22 Deepar	Blessington & District Forum	21/01/2005
5	Dr Daniel B. Bevans	2 Haywood, Blessington, County Wicklow,		25/01/2005
6	Cllr Edward Timmins	Grangecon, Dunlavin, Co Wicklow,	Baltinglass Electoral Area	31/01/2005
7	Ms. Sinead Impey	129 Burgage Manor, Blessington, Co. Wicklow,		20/01/2005
8	Ms. Muriel O'Neill	Hempstown, Blessington, Co. Wicklow,		04/02/2005
9	Ms Laura Breen	18 Woodleigh Ave, Blessington, County Wicklow,		09/02/2005
10	Ms Laura Breen	18 Woodleigh Avenue, Blessington, Co. Wicklow,		04/03/2005
11	Mr Joe McCormac PC	9 The Park, Blessington Abbey, Blessington, County Wicklow		15/03/2005
12	Mr Billy Timmins, TD	Dáil Éireann, Leinster House, Kildare Street, Dublin 2	Fine Gael	21/03/2005
13	Mr Seamus Griffin	Hempstown, Blessington, County Wicklow,		23/03/2005
14	Ms Gemma Griffin	Hempstown, Blessington, County Wicklow,		23/03/2005
15	Ms Teresa Halloran	4th Floor, Dun Sceine, Harcourt Lane, Dublin 2	DOELG	07/03/2005
16	Ms Mary Brennan	Crosscool Harbour, Blessington, Co. Wicklow,		30/03/2005
17	Mr & Ms Hugh & Helen Magee	Crosscool Harbour, Blessington, Co Wicklow,		05/04/2005
18	Mrs E R Parnell	Ave Maria, Crosscool Harbour, Blessington, County Wicklow		06/04/2005
19	Professor J Parnell	Ave Maria, Crosscoolharbour, Blessington, County Wicklow		25/04/2005
20	Woodleigh Residents Committee	5 Woodleigh Way, Blessington, County Wicklow,		23/05/2005
21	Mr Michael Sargent	Blessington, County Wicklow,,	Blessington & District Forum	20/06/2005

An overview of the submissions received is provided below:

- Discrepancy of waste figures applied for by Roadstone – quantities in site notice differ to those in application;
- Applicant's proposal to cater only for waste at the Roadstone facility, 3rd party waste should not be authorised at the landfill;
- The application is for illegal waste which if a greenfield would never be authorised to host a landfill;
- All illegal waste should be removed to a licensed facility;
- The EIS acknowledges the groundwater is contaminated by the illegal waste activities;
- The waste sites and landfill proposal overlie the Blessington Aquifer which serves Blessington and surrounding areas with all water needs;
- The GSI rating of R3 negates the siting of a landfill;
- Any lined landfill cells will leak to the aquifer, and possibly contaminate the reservoir, east;
- Some of the groundwater results show impossible figures – pH of 0, incomplete ionic balances;
- NPWS states Peregrine Falcons have breed in the sandpits at Roadstone and within 200m of Area 4. Species is protected status under Birds Directive. A new nest platform should be constructed away from Area 4 to host the birds out of risk;
- Wicklow Co Co availed of the Roadstone pits for their waste disposal requirements;
- Illegal waste activities should not be rewarded by legitimising this site (Timmons TD);
- Wicklow Co Co authorised the construction of new housing adjacent to illegal landfill, yet buyers and new homeowners at *Woodleigh* were never made aware of the illegal waste at Area 6.

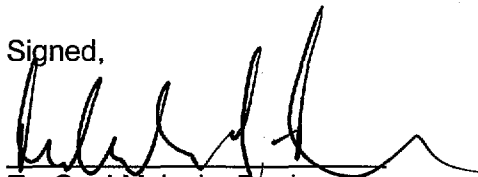
- The OEE should carry out a full investigation of the Roadstone site, there are other waste deposits yet to be detected.
- A notice issued by Wicklow Co Co to Roadstone specifying the construction of an engineered landfill facility on site pre-empts an EPA decision.
- The waste at Area 6 lies only 20m from housing at *Woodleigh*, as shown on RTE Prime Time of 7 October 2004;
- Updated landfill gas monitoring is required at Area 4;
- Section 4.5 of the EIS states *Woodleigh* will be exposed to dust and an odour nuisance on excavation of waste;
- The sustainability/balance of all waste removal as a once off should be balanced against the long-term costs of landfill, construction, on going insurance, energy costs, security, salaries, etc. The parent company CRH has the monies to remove all the waste, they made €1Billion profit in 2004;
- The longer the illegal waste stays on site the greater the risk to human health;
- Roadstone claim there is no facility within 80km to accept any waste arising from the excavations, yet the submission points out Ballynagran landfill lies within the distance;
- The proposal to bury waste in an engineered on-site landfill has not been demonstrated to be the best option for the site notwithstanding the merits the EIS offers. Other sites for landfill off-site should be investigated. The boundary at *Woodleigh* should be defined and assessed for other illegal waste deposits. The odour values at Area 6 on waste excavation imply only limited odours will affect the local residents at *Woodleigh*, but a consultant's report determines the odour thresholds for nuisance will be more widespread than the applicant's report. It is not clear that the results for perched water in the illegal waste deposits were used in modelling the QRA, or if so a sensitivity analysis was run. Only 2002 groundwater data was utilised in the EIS and water reports interpret against an elevated contamination level as maximum permissible levels rather than against the unpolluted levels as required by the Water Framework Directive. 5 pages of this submission delivers a critical analysis of water data supplied by Wicklow Co Co and their consultants between November 2004 and April 2005 – all samples show a significant variation in reported parameter values and no PAH values were determined – reliability of these results should be audited. (Submission no. 21; 20 June 2005 [as part of the Blessington & District Forum submission; M Sargent & TMS Environment Ltd]).

8 Recommendation

For the reasons stated above and the issues raised in the submissions I recommend the refusal of the landfill activity, and this being the principal activity applied for (Class 1, 3rd Schedule), I recommend rejection of the application.

Overall, I recommend the refusal of a waste licence to Roadstone Dublin Limited.

Signed,



EurGeol Malcolm Doak,
A/Senior Inspector

BA (Mod) Earth Science, MSc (Hydrogeology). PGeo. 5th July 2005.

office



**OFFICE OF
LICENSING &
GUIDANCE**

LICENSING UNIT MEMORANDUM

TO:	DIRECTORS
FROM:	Malcolm Doak
DATE:	11 July 2005
RE:	Additional information- Submission on 213-1 post 5 July 2005

21 valid submissions were received in relation to this application which were dealt with in my inspector's report to the Board. Herewith find a submission received after the 5th July 2005

Submission from Dublin City Council

Their concerns include:

- (i) The proposal to dispose of 180,000T of waste within the applicant's landholdings at Dillonsdown carries inherent risk to the water quality of the Poulaphouca Reservoir.

Comment:

The concerns raised are similar to those raised in the other submissions which have been dealt with in the IR report.