

council state that it is vital that risks to the water quality are eliminated or at least minimised. The council in their objection comment on a number of the conditions of the waste licence and make specific recommendations in relation to some conditions. J.W. Carnegie in their submission acknowledges the importance of the reservoir but note that the site is only to accept inert waste.

Technical Committee's Evaluation

The Technical Committee (TC) notes the comments. The Inspectors report in Section 5 states "Groundwater flow is generally southeast towards the Pollaphuca reservoir which lies approximately 1.7km from the facility".

The submission from J.W. Carnegie does not however mention that the quarry has accepted waste material intermittently since 1991 totalling approximately 500,000 tonnes. The Inspector that assessed the application determined that there is not enough information to determine the volume, mass and types of waste deposited (ref: Inspectors Report). The PD issued covers two areas a) the historical waste deposited and b) the operation of a new inert landfill. A risk assessment must be carried out on waste previously deposited at the quarry (Condition 5.2), to ascertain the impacts if any of the facility on ground and surface waters resources including the Poulaphouca Reservoir.

The TC notes that there is a typographical error in the PD.

Recommendation

Replace "Carneige" with "**Carnegie**" in the licence.

Ground 1: Condition 3.12 (Inert Landfill Liner)

Conditions 3.12 specifies the type of landfill liner (Inert Landfill Liner Specification) to be employed for the base and wall. Dublin City Council states that the risk of contamination of the groundwater and surface waters warrants the provisions of a higher standard of liner meeting the specifications for a municipal waste landfill along the base and full height of the site walls. They state that this is vital and necessary to reduce the risk of leachate contamination of the ground and surface waters.

J.W. Carnegie in their submission fails to see the Council justification for increasing the liner specification and argue that the liner specified meets the European standards for an inert site.

Technical Committee's Evaluation

The TC considers that the inert liner specified is sufficient given that this is a proposed inert landfill facility. The design of the inert lining system conditioned in the licence complies with the requirements of the Landfill Directive.

Recommendation

No Change

[Empty Box]

Ground 2: Condition 3.7.1 (Waste Inspection and Quarantine)

Condition 3.7.1 requires that a waste inspection and quarantine area is provided and maintained at the landfill facility. Dublin City Council argue that the waste inspection and quarantine area should be underlain with a liner to prevent any possible contamination of the ground and surface waters. The liner should be of a high standard meeting the specification for a municipal waste landfill.

J.W Carnegie in their submission note that they propose to construct a bunded inspection area from concrete to BS specifications, and any discharge from the quarantine area is to be contained within the bund if necessary. They note that this is the specification used in municipal waste landfills.

Technical Committee’s Evaluation

The TC does not consider that a liner is necessary underneath these areas. The waste inspection and quarantine areas will have to be impermeable (e.g. concrete) and will have to meet the design standards in the EPA Landfill Site Design Manual. A Specified Engineering Work proposal on the design will be submitted to the Agency for approval.

Recommendation

No Change

Ground 3: Condition 3.7.3 (Drainage from waste inspection area)

Conditions 3.7.3 requires that the drainage from the waste inspection area shall be directed to the wastewater treatment system. The objector notes that the wastewater treatment system specified in the Condition 3.10 is presumably for the treatment of wastewater from the office and toilet facility to be provided. They state that the drainage from the waste and quarantine area should not be directed to this wastewater treatment system. J.W. Carnegie in their submission state that in the event of contamination the discharge will be tested and disposed off site if necessary.

Technical Committee’s Evaluation

A Specified Engineering Work proposal on the design of the wastewater treatment system will be submitted to the Agency for approval. The system will have to cope with both wastewater from the offices and toilets and the inspection area. This could mean the use of a settlement tank for silts along with the wastewater treatment system. The TC note that drainage from the waste inspection area could be diverted to the wastewater treatment system given that only inert waste can be accepted. In the event of the acceptance of unsuitable or non-conforming waste (that is likely to give rises to spillages or leachate unsuitable for treatment) then the drainage should be collected for off-site disposal at a suitable facility to be agreed with the Agency.

Recommendation

Amend Condition 3.7.3 as follows;

Drainage from the waste inspection area, which is suitable for on site treatment, shall be directed to the wastewater treatment system. In the event of unsuitable or non-compliant waste being discovered during an inspection of incoming waste the drainage from the inspection area shall be collected for disposal of site, unless otherwise agreed by the Agency.

Ground 4: Condition 3.9.1 & 5.10.2 (Wheelwash)

The objector notes that Condition 3.9.1 requires the licensee to establish and maintain a wheel wash facility. Condition 5.10.2 requires that this facility be inspected daily, that it is drained and silt, stones and other accumulated material is removed as required. They note that the wheel wash will contain residues of all the waste brought onto the site for disposal. The drainage from the wheel wash must be addressed as it could be contaminated and should not be directed to the wastewater treatment system for the office and toilet facility. In the objectors view the drainage from the waste inspection and quarantine area and wheel wash should be reviewed and either a suitable treatment procedure put in place or consideration should be given to the disposal of the wastewater off site. They consider that this is required to prevent any possible contamination of the ground and surface waters.

J.W Carnegie emphasis that the type of waste proposed to be accepted at the site is of an inert nature and diversion to the waste water treatment system is considered adequate.

Technical Committee's Evaluation

The TC notes that only inert waste can be brought on to the site. A Specified Engineering Work proposal on the design of the wastewater treatment system will be submitted to the Agency for approval.

Recommendation

No Change.

Ground 5: Conditions 5.2.1, 5.2.2, 5.2.3 (Investigation into waste deposited on site)

Condition 5.2.1 requires the licensee to submit a conceptual model of the site to identify potential contaminants, pathways and receptors as specified in BS10175: 2001 or ASTM E1689-95. Condition 5.2.2 require the licensee to carry out ground or geophysical investigations to determine the amount and types of waste previously deposited at this facility, and to assess the impact the waste is having on the receiving groundwater. Condition 5.2.3 requires the licensee to submit within 6 months of the granting of this license a quantitative risk assessment to determine a remediation strategy for the facility. Dublin City Council in their objection considers that this determination of the amount and types of waste previously deposited at the facility should be carried out prior to the grant of licence. They argue that the licensee should then be requested to submit proposals for the remediation strategy as part of his licence application. J.W. Carnegie

state that this would mean a significant impact on their business as the result of further delays and they state that they have “no problems in submitting this report as currently conditioned in the PD licence, likewise with the undertaking of any remediation determined to be necessary as a result of the report”.

Technical Committee’s Evaluation

The TC notes that the Inspectors Report mentions that “*the quality of the application is poor and the material contained within is dated. However, a decision was made to move forward with a recommendation...*” Ideally the conceptual model, investigation and remediation strategy could have been submitted with the application. However, the TC notes that the Inspector Report considered that the EIS submitted by the applicant complied with the requirements of Article 13 of the licensing regulations (S.I. 133 of 1997). The PD issued covers two areas a) the historical waste deposited and b) the operation of a new inert landfill. The TC note that this application was received in October 1998 and requesting the applicant to submit this information, as part of the application would further delay any necessary remediation works. The TC considers that independent consultants should carry out the investigations into the previously deposited waste and the remediation strategy.

The Inspectors Report in Section 9 recommends that ground investigations and a risk assessment of the previously emplaced waste are carried out and agreed by the Agency before wastes can be deposited or recovered in any part of the facility. The TC considers that Condition 5.1 should be reworded to emphasise that the licensee cannot deposit or recover waste without first carrying out the remediation investigation. The TC also notes that the Restoration and Aftercare Plan required under Condition 4.1 has to be submitted within eighteen months of the date of the grant of the licence. In order to link in with the remediation strategy (Condition 5.2.3) the TC considers that the Restoration and Aftercare Plan should be submitted within six months and not eighteen.

The capping specified in Condition 4.4 is that for an inert landfill. The TC considers that non-hazardous landfill capping maybe required in areas historically filled with waste (provided that the risk assessment proves that leaving the waste in situ is the best environmental option in this case).

In addition the TC also considers that financial provisions for carrying out any remediation or waste removal must be in place before work on the inert landfill can commence, and to allow this we consider that the timescales in Condition 12.2.1 and 12.2.2 should be reduced.

Recommendation

Amend the first sentence of Condition 4.4.1 as follows:

The final capping **for the inert landfill** shall consist of the following:

Replace Condition 4.4.2 with the following condition;

Following the review of the Quantitative Risk Assessment as specified in Condition 5.2, the Agency may specify more stringent design for the capping, and any such capping shall be installed as instructed or as agreed by the Agency.

Amend Condition 5.1 as follows:

Work on the construction of the inert landfill shall not commence and waste shall not be deposited or recovered in any part of the facility without a) the prior agreement of the Agency and b) before the Quantitative Risk Assessment and remediation strategy required under Condition 5.2 is agreed with the Agency.

Add a new Condition 5.2.3 as follows:

The investigations and assessments required under Conditions 5.2.1, 5.2.2 and 5.2.3 shall be carried out by independent consultants, which have to agreed in advance by the Agency.

Amend Conditions 4.1, 12.2.1, 12.2.2 and 12.2.3 as follows:

4.1: Change the “eighteen months” timescale for submission of Restoration and Aftercare Plan to “**six months**”.

12.2.1: Change the “twelve month” timescale for the submission of a fully costed Environmental Liabilities Risk Assessment and Proposal for Financial Provision to “**four months**”.

12.2.2: Change the “18 months” timescale for establishing the fund or guarantee to “**six months**”.

Ground 6: Condition 6.3.1 (Direct emission to groundwater)

Section 6.3.1 states that there shall be no direct emissions to groundwater. Dublin City Council considers that a suitable groundwater monitoring programme should be put in place to ensure that no emissions to groundwater occur during the filling, restoration and aftercare of the landfill site. It is noted that four new monitoring wells are required by Condition 3.17.2. J.W. Carnegie in their submission considers that the groundwater monitoring regime in the PD is adequate.

Technical Committee’s Evaluation

Groundwater monitoring is specified in Condition 8.1, Tables D.1.1 and D.4.1. The TC notes that the investigation required under Condition 5.2 may identify the need for further monitoring and this should be factored into the monitoring programme set out in Schedule D Monitoring.

Recommendation

Amend the groundwater monitoring column in Table D.1.1 as follows:

Groundwater Stations: a) MW4, b) Four monitoring wells as required by Condition 3.17.2, c) Private wells required by Condition 8.7.1, d) **Additional sampling points shall be installed as specified by the Agency.**

Ground 7: Condition 6.4.1 & 6.4.2 (Surface Water Discharges and Monitoring)

Condition 6.4.1 requires that no substance shall be discharged to surface water in a manner or at a concentration which following initial dilution causes tainting of fish or shellfish. Condition 6.4.2 requires the applicant to submit proposals for the monitoring of water in the surface water/groundwater ponds at the south side of the facility. Dublin City Council considers that the applicant should be requested to put a comprehensive surface water monitoring programme in place to ensure that there is no reduction in the quality of the raw water in Poulaphouca Reservoir and the status of the water as a result of this landfill site. J.W. Carnegie considers that this request is unrealistic given the low risk associated with the inert waste to be landfilled.

Technical Committee's Evaluation

Surface water monitoring is specified in Condition 8.1, Tables D.1.1 and D.4.1. Two sampling points must be agreed with the Agency at the groundwater / surface water lake immediately south of the facility. The TC notes that the investigation required under Condition 5.2 may identify the need for further monitoring and this should be factored into the monitoring schedule at the back of the licence.

Recommendation

Amend the surface water monitoring column in Table D.1.1 as follows:

Surface Groundwater Lake Stations: Two sampling points shall be agreed with the Agency and shall be established within one month of the date of grant of licence at the groundwater/surface water lake immediately south of the facility. **Additional sampling points shall be established as specified by the Agency.**

Ground 8: Schedule A (Types of Inert Waste)

Dublin City Council note that Schedule A sets out the amount of Inert Construction & Demolition waste to be accepted at this facility each year. They consider that the specific types of inert construction and demolition wastes acceptable for disposal at the facility should be listed.

Technical Committee's Evaluation

The TC agrees that while Schedule A sets out the tonnage of inert C&D waste that can be accepted the actual individual waste types are not specified. Table F.1 list the waste types acceptable for recovery at the facility. The TC considers that a similar table listing the waste for disposal should also be specified in the licence. This table should be based on the table of inert waste listed in the *Council Decision of 19 December 2002 establishing*

criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC (2003/33/EC). It should be made clear in the licence that the limits for non-inert waste specified in the Council Decision 2003/33/EC apply.

Recommendation

Amend Condition 1.4 as follows:

Only those waste types listed in Schedule A: Waste Acceptance, **Table F.1 and Table F.2**, of this licence may be recovered and disposed at the facility subject to the maximum quantities and other constraints specified in **the Schedules** and in the licence.

Amend Condition 5.4.2 as follows:

The acceptance of inert waste **for disposal** or recovery shall be as specified in Schedule F: Acceptance of Inert Waste of this licence.

Add a new Table F.2 listing the waste acceptable for landfilling at the inert landfill as detailed below:

F.2 Acceptable Construction and Demolition Waste for Disposal at the Inert Landfill

Only the wastes listed below are acceptable for recovery at the facility, unless otherwise agreed with the Agency.

EWC Code ^{Note 1}	Description	Restrictions ^{Notes 2 to 7}
17 01 01	Concrete	Selected C&D waste only (*)
17 01 02	Bricks	Selected C&D waste only (*)
17 01 03	Tiles and ceramics	Selected C&D waste only (*)
17 01 07	Mixtures of concrete, bricks, tiles and ceramics	Selected C&D waste only (*)
17 05 04	Soil and Stones	Excluding topsoil, peat; excluding soil and stones from contaminated sites

(*) Selected construction and demolition waste (C&D waste): with low contents of other types of materials (like metals, plastic, organics, wood, rubber, etc). The origin of the waste must be known.

Note 1: Waste not appearing on this list above (F.2) must be agreed with the Agency and must be subject to testing as laid down under Section 1 of Council Decision 2003/33/EC to determine if it fulfils the criteria for waste acceptance at landfills for inert waste as set out in Section 2.1.2 of the Council Decision 2003/33/EC.

Note 2: Waste on the list in Table F.2 are assumed to fulfil the criteria as set out in the definition of inert waste in Article 2(e) of the Landfill Directive and the criteria listed in Section 2.1.2 of Council Decision 2003/33/EC. The waste can be admitted without testing at the inert landfill.

Note 3: The waste must be a single stream (only one source) of a single waste type. Different wastes contained in the list may be accepted together, provided they are from the same source.

Note 4: In the case of suspicion of contamination (either from visual inspection or from knowledge of the origin of the waste) testing should be applied or the waste refused. If the listed wastes are contaminated or contain other material or substances such as metals, asbestos, plastics, chemicals etc to an extent which increases the risk associated with the waste sufficiently to justify their disposal in other classes of landfills, they may not be accepted in the landfill.

Note 5: If there is a doubt that the waste fulfils the definition of inert waste according to Article 2(e) of the Landfill Directive and the criteria listed in Section 2.1.2 of Council Decision 2003/ 33/EC or about the lack of contamination of the waste, testing must be applied. For this purpose the methods listed in Section 3 of Council Decision 2003/33/EC shall be used.

Notes 6: No C & D waste from constructions, polluted with inorganic or organic dangerous substances, e.g. because of production process in the construction, soil pollution, storage and usage of pesticides or other dangerous substances, etc., unless it is made clear that the demolished construction was not significantly polluted.

Note 7: No C & D waste from constructions, treated, covered or painted with materials, containing dangerous substances in significant amounts.

Add a new Condition 5.4.3:

The leaching limit for waste acceptable at the inert landfill shall be as specified in Council Decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC (2003/33/EC).

Ground 9: Schedule D.1 & D.4 (Monitoring)

Schedule D.1 specifies the monitoring to be carried out. Dublin City Council considers that the number of surface water sampling points and groundwater stations need to be

increased substantially to enable proper baseline data to be obtained and to provide a realistic monitoring programme during the operation of the facility.

Schedule D.4 lists the various Water and Leachate parameters and the monitoring frequency. The Council considers that frequency of testing proposed is not sufficient to provide an adequate monitoring system for the protection of the water quality in the Poulaphouca Reservoir. The request that the frequency should be increased to provide realistic results, which will allow action to be taken in the event of contamination of the ground or surface waters.

J.W. Carnegie in their submission note that the parameters and frequencies conditioned are relatively standard for an inert waste facility. They note that Dublin City Council have not justified why they require these frequencies increased.

Technical Committee's Evaluation

Condition 5.2.1 and 5.2.2 require a detailed investigation before landfilling commences as per Condition 5.1. This investigation may identify the need for further monitoring. The TC considers that there should be scope in the monitoring schedule to increase the monitoring depending on the risks identified. This is covered in the recommendations in relation to Grounds 6 and 7 above.

In relation to leachate monitoring the TC notes that Schedule D.1.1 specifies that leachate monitoring is carried out “*as required by Condition 8*”, however, this condition does not specify leachate monitoring requirements.

The TC considers that the landfill gas monitoring requirements in the licence should be increased in order to determine migration risks. It is noted that an elevated methane level was detected during an Agency inspection and this indicates that decomposition of biodegradable waste was occurring. The TC considers that the boreholes in Phase 2, as specified in Condition 3.17.1, should be installed sooner than the six months specified in the licence. Data on landfill generation and potential migration will be required to carry out the risk assessment specified in Condition 5.2.

Recommendation

Change the timescale in Condition 3.17.1 a) from “six months ” to “**two months**”.

Add a new Condition 3.17.3 c) as follows:

Within two months of the date of grant of this licence, the licensee shall install landfill gas perimeter monitoring boreholes around the perimeter of the existing waste mass in order to determine or detect any off site gas migration.

Amend the monitoring specified in Table D.1.1 as indicated below;

Landfill Gas Stations; Five landfill gas locations as required by Condition 3.17.1 shall be submitted for agreement by the Agency within one month of the date of grant of licence. **Perimeter landfill monitoring boreholes as required by Condition 3.17.1 c) shall be submitted for agreement by the Agency within one month of the date of grant of licence.**

Leachate Stations: Sampling points shall be installed as specified by the Agency

Ground 10: Schedule F1 (Waste acceptable for recovery)

Schedule F1 lists the wastes that are acceptable for recovery at the facility. Dublin City Council considers that Solid Road Planing's, Solid Tarmacadam and Solid Asphalt should not be accepted for recovery at the facility.

Technical Committee's Evaluation

The TC understands that the waste specified in Table F.1 will be used in site development and site restoration works and therefore these waste will have to be suitable for these works.

Recommendation

In Table F.1 add an * to "*Solid Road Planings, Solid Tarmacadam, Solid Asphalt*" and add a note at the end of the table stating that "*** only for use in constructing and maintaining site road and tarmac hardstanding areas**".

Signed: _____

Brendan Wall
Acting Senior Inspector
Technical Committee Chairperson