

INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 18-1

RECOMMENDATION: That a licence be granted subject to conditions.

(1) Introduction

This application is for the continued operation of the Kilbarry landfill at Kilbarry, Waterford City. A landfill has operated within the application boundary, comprising approximately 20 hectares, since the early 1970's. Prior to 1960 and between 1960 and 1980 waste was deposited to the north and east of the application boundary. Waste accepted at the landfill for disposal is deposited within unlined areas. The application is for the disposal of non-hazardous waste at the facility within unlined cells. The development of a Civic Waste Facility and a Metal Recovery area is also included in the application. An EIS was not required to accompany the application. Fifteen submissions were received during the consideration of the application.

The Kilbarry landfill, is located in the townland Kilbarry on the southern fringe of Waterford City. The site is situated to the west of the John's River and the R675 (Tramore Road) and to the south of Waterford Recreation Centre. Access to the site is off the N25 along the Dunhill Road. The landfill is visible from residential properties in the immediate vicinity of the facility and in elevated areas to the east and west of the facility. The site is located in a reclaimed former wetland area which was liable to flooding. The site is bounded to the south by Kilbarry Bog, a proposed Natural Heritage Area (pNHA) and to the west by agricultural land. The continued operation of the landfill does not involve the landfill extending into Kilbarry Bog pNHA or the adjoining agricultural land. Grass production and tillage crops are the dominant agricultural landuse in the land immediately to the south and west of the facility with dairying, tillage and dry stock production the main farming activities.

The nearest residential property adjoins the western site boundary along the Dunhill Road. There are residential properties along the Dunhill Road and Lacken Road to the west of the facility, to the east of the Tramore Road and adjoining the N25 in the vicinity of the landfill. Landuse in the area includes residential areas, industry (e.g Waterford Crystal etc.), warehousing, retail outlets, waste management activities (a skip hire company premises adjoins the facility), educational establishments, community facilities and recreational facilities. Kilbarry Church (now in ruins) and the associated graveyard, a site of archaeological importance, is located immediately to the west of the facility boundary. Access for members of the public to this feature is required under Condition 4.23.1.

It has been recognised by the Corporation for some time that the Kilbarry landfill has a finite life.

Waste is currently deposited within unlined areas. The Draft PD, however, restricts waste disposal to within lined cells only. No leachate collection, storage or treatment is undertaken at the facility at present although lined cells will be constructed on former landfilled areas.

The site is underlain by a Regionally Important Aquifer. The surface water quality results submitted indicate that leachate generated within the facility is migrating to the perimeter drain which ultimately discharges to the Lisduggan Stream and the Johns' River. On the basis of the groundwater monitoring results submitted in the application, which indicate leachate pollution and the presence of List I and List II substances, the groundwater beneath the site is permanently unsuitable for agricultural, commercial, domestic, fisheries, industrial or recreational uses. The introduction of the leachate management system, surface water management system and the installation of the capping layer as specified in the Draft PD will ensure that the emissions of leachate to surface water and groundwater will be minimised during the continued operation, restoration and aftercare of the facility. In addition, a groundwater management programme is required to be implemented at the facility to ensure the protection of groundwater resources in the vicinity of the facility.

There is no landfill gas management programme currently in place at the facility. The introduction of the landfill gas management system as specified in the Draft PD will control emissions of landfill gas from the facility.

On the basis of the above I recommend the grant of a licence, subject to the conditions of the Draft PD, to allow the continued acceptance of waste for disposal within lined cells only, up to a maximum presettlement height of 15m OD (as proposed by the applicant) and a maximum annual quantity of waste for acceptance of 75,000 tonnes.

Appendix 1 contains a site location drawing and a drawing showing the proposed site layout.

Table1: Details of correspondence relating to the waste licence application.

Notices	Issue Date(s)	Reminder(s)	Response Date(s)
Article 8	04 November 1997		20 November 1997
Article 14 (2) (b) (ii)	23 February 1998 18 May 1998, 13 July 1998, 15 December 1998, 24 December 1998,		21 April 1998, 1998, 07 August 1998, 30 September 1998 1998, 30 October 1998, 30 November 1998, 24 December 1998 22 January 1999, 26 February 1999,

			17 May 1999,
Article 14 (2) (a)	08 September 1999		
Article 16	23 December 1999		March 2000, 08 September 2000

FACILITY VISITS:

DATE	PURPOSE	PERSONNEL
17/10/97	Site notice assessment	Tadhg O'Mahony
02/12/97	Site notice assessment and site visit	Tadhg O'Mahony, Brian Donlon
02/03/98	Review site operation	Tadhg O'Mahony
02/09/98	Review site operation	Tadhg O'Mahony
02/03/00	Site visit update on operational practices	Tadhg O'Mahony, Ted Nealon, David Shannon, Caitriona Collins
04/09/00	Site meeting Waterford Corporation	Tadhg O'Mahony
13/09/00	Site meeting with Duchas personnel	Tadhg O'Mahony

(2) Site Development

A civic waste facility has been constructed inside the entrance to the facility since the application was made to the Agency. Receptacles for storage of glass, beverage cans, cardboard, waste oils, batteries and fluorescent tubes within the civic waste facility prior to collection for transport offsite will be provided at this facility.

The civic waste facility as constructed is located adjacent to the nearest residential property which adjoins the facility boundary. The bottle bank is required to be relocated under Condition 4.20.2.

Condition 4.21 requires a Metal Recovery area as proposed by the applicant to be developed for the storage of metals including abandoned cars, white goods and other metals prior to their removal offsite for recovery. This will comprise an area of hardstanding, as current practices at the site for the storage of abandoned vehicles have resulted in surface contamination due to oil and fuel. Fuel and oil are required to be removed from abandoned vehicles and other machinery stored in this area upon their acceptance.

Condition 5 requires proposals for the recovery of construction and demolition waste and inert waste for use in site development works and in site restoration, the recovery of commercial waste including cardboard and the separation of recyclable material

from the waste to be submitted. In addition a proposal for the reduction of the quantity of sludges to be accepted at the facility is required to be submitted.

A wheelwash, weighbridge, wastewater treatment unit, site office, waste inspection and quarantine area are required to be maintained at the facility. Site security and stockproof fencing is required to be installed and maintained around the entire facility boundary.

Condition 4.17 requires the existing designated sludge disposal area within the facility to be decommissioned. Condition 5.7 requires sludges to be disposed of in segregated areas within the active tipping area.

There is no wastewater treatment plant in Waterford City at present. Planning permission has, however, been granted for the construction of a wastewater treatment plant for the area. Prior to this and once the leachate collection drain and sewer connection is commissioned leachate will be discharged to sewer which ultimately discharges to the River Suir. Once the proposed new wastewater treatment plant is commissioned, leachate collected at the facility will be pumped by rising main to sewer for treatment at the wastewater treatment plant.

A surface water management plan for the control of surface water run off from the facility and the protection of surface water resources in the vicinity of the facility including Kilbarry Bog pNHA is required to be submitted.

Condition 4.16 requires a system for the active abstraction, collection, flaring and utilisation of landfill gas to be introduced at the facility. In addition a landfill gas-venting trench is required to be constructed along the eastern and northern facility boundary.

Condition 8.1 of the Draft PD requires a Restoration Plan (including Aftercare) for the facility to be submitted. This plan is required to address the ongoing protection and measures for enhancement of the habitats within and immediately adjoining the Kilbarry Bog pNHA.

(3) Waste Types and Quantities

The total annual quantity of waste permitted to be accepted at the facility is 75,000 tonnes per annum as specified in Condition 1.4. 68,000 tonnes of this is destined for disposal in the specified landfill areas, the remainder will be directed to the recovery activities permitted at the facility. Waste for disposal at the facility includes 2,500 treated sewage sludge and 7,500 treated industrial non-hazardous sludges. Any increase above the annual quantity permitted in the Draft PD would require an Environmental Impact Statement to be submitted along with an application for a review of a waste licence.

Schedule A specifies the waste types permitted to be accepted at the facility for recovery and disposal while Condition 1.6 specifies those waste types prohibited from being accepted at the facility.

Condition 5.1 restricts the areas within which waste is permitted to be disposed of at the facility. The maximum height to which waste for disposal is permitted to be deposited at the facility is restricted to 15m O.D. (Condition 5.4) as proposed by the applicant.

(4) Emissions to Air

Emissions to air from the facility will include landfill gas, landfill gas combustion products, dust, odours and noise. Environmental monitoring and emission limit values are set in *Schedule F: Monitoring* and *Schedule G: Emission Limits* respectively.

Landfill gas monitoring undertaken as part of the application and ongoing monitoring associated with the facility has detected landfill gas emissions at locations outside the existing landfilling area and immediately to the east and north of the facility boundary. Landfill gas emissions recorded outside the landfill boundary could be associated with historical landfilling undertaken to the east of the facility boundary during the period 1960 and 1980 and prior to 1960. Recommendations in relation to investigation of historical landfill areas are included in *Section (7) Other Issues* of this report.

(5) Emissions to Groundwater

Site Geology

The Geological Survey of Ireland classifies the bedrock beneath the site as the Ross member of the Campile Formation (Cars). The boreholes drilled at the site which indicated the presence of mudstone, siltstone and tuffs confirmed this. The borehole logs show the thickness of overburden varies across the site. The typical sequence consists of made ground (3.5 to 11 m) overlying either peat silt or clay with sand and gravel.

Site Hydrogeology

The County Waterford Groundwater Protection Scheme (GSI, 1998) classifies the groundwater resources associated with the volcanic rocks of Ordovician age dominated by the Campile Formation which underly the site, as a regionally important aquifer (Rf) characterised by fissure flow. In-situ permeability tests undertaken in bedrock during the installation of investigation boreholes are reported in the application to indicate moderate to low permeability.

Groundwater Vulnerability

According to the Groundwater Protection Scheme the groundwater vulnerability rating associated with the site is classified as ranging from low to extreme within the site. Springs occur adjacent to the north-western corner of the site.

The overburden associated with the site and adjoining area is described as consisting of a clayey till with the thickness varying across the site from in excess of 10 m to the north and east, with outcrop occurring to the south. This indicates the vulnerability rating is low to the north of the site and high to the south. Site specific data obtained by the applicant during the investigations including in-situ permeability tests undertaken indicate moderate to low permeability overburden.

Groundwater flow direction is described in the application as probably being from the higher ground in the southeast towards the stream adjoining the west of the site. Based on conductivity measurements of surface water surrounding the site leachate movement is reported in the application to be in an easterly and southerly direction.

Waterford Corporation supplies mains water to households along the Kilbarry Road and the Lacken Road immediately to the west of the facility boundary. It is stated in the application that a number of properties to the southwest of the site may be served by private boreholes. Livestock water supplies may also be obtained from either groundwater or surface water resources to the south of the facility.

Groundwater Quality

Monitoring of groundwater quality has been undertaken at a number of locations within the facility boundary. The most recent monitoring undertaken during March and June 2000 indicate leachate pollution of groundwater. In the March 2000 monitoring results leachate pollution was evident in GW4, GW5, GW11 and GW12: GW4 and GW5 adjoining the eastern boundary of the landfill (ammonia 202 mg/l and 383 mg/l respectively), GW11 adjoining the southern boundary of the landfill (ammonia 19.4 mg/l), GW12 adjoining the western boundary of the landfill (ammonia 489 mg/l). In the June 2000 monitoring results leachate contamination was evident in GW4, GW5, GW7, GW11 and GW12: GW4 (ammonia 282 mg/l), GW5 (ammonia 625 mg/l), GW7 adjoining the western facility boundary (ammonia 84 mg/l), GW11 (ammonia 5mg/l) and GW12 (ammonia 811 mg/l). In all groundwater samples List I (cadmium) and List II substances were detected. On the basis of the groundwater monitoring results submitted in the application, the groundwater beneath the site is permanently unsuitable for agricultural, commercial, domestic, fisheries, industrial or recreational uses due to pollution by leachate. See Appendix 4 for the location of the groundwater monitoring locations.

The leachate management measures required under the conditions of the Draft PD and described in Section 2 is required to be installed and commissioned within twelve months of the date of grant of the licence. Once installed and commissioned this will facilitate the collection and storage of leachate generated within the facility, thereby minimising the discharge of leachate from the landfill to surface water and

groundwater. The effectiveness of the proposed leachate collection measures will be monitored by the installation of a series of monitoring boreholes parallel to the leachate collection drain.

(6) Emissions to Surface Waters

The watercourses in the vicinity of the site are within the catchment of the John's river and include the Lisduggan Stream, the watercourses within the Kilbarry Bog, the watercourses within the land to the west of the landfill site and the perimeter landfill drain. These water courses discharge ultimately to the river Suir at Scotch's Quay approximately 500m downstream of Rice Bridge, the main bridge across the Suir in Waterford City. Biological and chemical monitoring undertaken as part of the application and subsequent water quality analysis indicates that the perimeter landfill ditch/drain is in places seriously polluted. Biological monitoring undertaken by the applicant as part of the application and the Agency (as part of the national monitoring programme) indicate that the Lisduggan Stream is seriously polluted (Q Rating 1-2 indicative of serious pollution) upstream of the landfill.

The John's River upstream of the landfill site is reported in the application to be relatively unpolluted and this is confirmed by the water quality monitoring results associated with the Agency's national monitoring programme. Monitoring results from a point upstream of the confluence of the John's River with the Lisduggan Stream show elevated levels of ammonia which may be associated with the landfill site. The John's River downstream of the landfill and within Waterford City is polluted and the applicant states that this would be the case without inputs from the landfill.

Monitoring data shows that downstream of the landfill site and the confluence of the Lisduggan stream with the landfill perimeter drain there is evidence of leachate contamination in the Lisduggan stream. Appendix 4 includes a drawing showing the watercourses in the immediate vicinity of the landfill.

(7) Other Issues

EU Complaint re: impact of Kilbarry landfill on wetlands associated with Kilbarry Bog proposed Natural Heritage Area.

During the Agency's consideration of the application one complaint in relation to the operation of the Kilbarry landfill was received by the Department of the Environment and Local Government from the EU Commission and was forwarded to the EPA. This complaint relates to the impact of the Kilbarry landfill on the adjoining Kilbarry Bog Proposed Natural Heritage Area in County Waterford (Complaint No.P98/5008).

The Kilbarry landfill has in the past encroached on wetland habitats within the former Kilbarry Bog Area of Scientific Interest. The current boundary of the proposed

Natural Heritage Area for the remaining wetland habitats of ecological interest within Kilbarry Bog is situated to the south and east of the boundary Kilbarry landfill site which is the subject of the waste licence application. The application does not involve any further encroachment of the landfill within the pNHA boundary. (See Appendix 2 – which includes a drawing showing the relative location of the landfill and the Kilbarry Bog pNHA).

Condition 9.20 requires an annual ecological assessment of the habitats and associated species within and immediately adjoining the Kilbarry Bog pNHA and associated watercourses. The scope of this assessment is required to be agreed in advance with the Agency. Condition 8.1 requires the restoration and aftercare plan for the facility to include details of the ongoing protection, measures for enhancement of the habitats within and immediately adjoining Kilbarry Bog pNHA.

Historical Landfilling Areas

Historical areas of landfilling adjacent to the facility boundary identified by the applicant are shown in Drawing No. Art 16-2 Rev.A-Plan of Historical Waste Disposal at Kilbarry landfill site (dated March 2000) submitted to the Agency (See Appendix 3). I recommend that the Agency should write to Waterford Corporation requesting an investigation of the historical landfill areas outside the facility boundary. Particular reference should be made in this investigation to the nature and extent of waste deposited in these areas, the potential for leachate and landfill gas to be generated therein, the resulting risk of environmental pollution from these areas and the requirement for environmental controls and an environmental monitoring programme to be introduced.

(8) Waste Management, Air Quality and Water Quality Plans

Waste Management Plan 1997-2002

The current Waste Management Plan 1997-2002 for Waterford Corporation was adopted in February 1998. Under Groundwater usage and vulnerability it is stated in the plan “that groundwater quality is vulnerable in the near vicinity of the Kilbarry landfill as this is an unlined (dilute and disperse) facility”. The Draft PD requires that leachate, groundwater and surface water management programmes be introduced at the facility.

The Waste Management Plan 1997-2002 includes as a policy under Waste Prevention and Management the development of a civic waste facility, (referred to in the plan as a civic amenity facility) at the Kilbarry landfill. The Draft PD makes provisions for the operation of a civic waste facility within the facility boundary

Under Waste Collection and Disposal, the plan includes as a policy “*the closure of the existing outdated landfill facility at Kilbarry and the introduction of proper aftercare practices and procedures*”. The Draft PD has taken into account this policy

through the restrictions placed on the waste quantities, the maximum height to which waste is permitted to be disposed and the requirement for the facility to be restored in accordance with an agreed Restoration and Aftercare Plan.

South East Regional Waste Management Strategy

The management of waste generated within Waterford Corporation is dealt with in the South East Regional Waste Management Strategy. The objective of this strategy is implementation of an integrated waste management approach for the South- East Region.

Air Quality Management Plan

There is no Air Quality Management Plan for either Waterford City or County.

Water Quality Management Plan for the Suir Barrow and Nore Estuary (May 1990)

This Plan includes the following objectives relevant to the John's River (which is included in the plan) and the adjoining Kilbarry Bog: the protection of habitats of particular scientific and conservation importance and the protection of wildlife to meet the requirements of national and international legislation. The Plan also has as a specific objective, the improvement of several reaches where the existing quality standards are less than satisfactory. The Plan identifies the Suir estuary and the John's River in Waterford City as one of the most seriously affected sections. This assessment is based on a 1983 survey of water quality. The surface water, groundwater and leachate management required by the Draft PD are in keeping with the objective of the Plan relating to the improvement of water quality in the John's River.

(9) Submissions/Complaints

An overview of all submissions received in relation to the waste licence application is provided below.

A total of 15 valid submissions were received.

Nuisances

The issues raised are listed separately below

(a) Odour

- There are constant odours emanating from the site in particular landfill gas and it is one of the primary reasons residents want the landfill site closed.
- Health hazard associated with continuous smells

Response:

Condition 6 specifies the odour control measures to be implemented at the facility. Condition 6.1 requires the licensee to ensure that the waste disposal and recovery activities at the facility shall be carried out such that odours do not result in significant impairment of or significant interference with amenities or the environment beyond the facility boundary. Condition 6.2 requires the facility and its environs to be inspected twice a week for nuisances due to odours. Written records including any

actions required are required to be made by the licensee. The application of daily cover at the end of the working day is required by Condition 5.12.

Condition 4.16 specifies the landfill gas management system to be introduced at the facility.

(b) Rats, Flies & Birds

- *There are large infestations of flies in the summer months to nearby residents (particularly the summer of 1995). The South Eastern Health Board has received complaints in relation to fly infestations Scattering of rubbish from the site by rats, birds and other animals.*

Response

Condition 6.2 requires the facility and its environs to be inspected twice a week for nuisances including those due to vermin and insects. Written records including any actions required are required to be implemented by the licensee. Condition 6 specifies the bird control and vermin control (rodents and insects) measures required to be implemented at the facility. A programme for the prevention, control and eradication of rodent and insect infestations at the facility is required to be implemented and maintained by the licensee. See response under Litter control in relation to litter control.

(c) Litter

- *A number of houses located near the landfill are experiencing problems with windblown litter*
- *Rubbish being removed from the landfill and discarded on the local roads.*

Response:

Litter control measures to be implemented at the facility are specified in Condition 6.4, which includes a requirement for daily litter patrols. Condition 6.4.7 requires all litter accumulated outside the landfill area and within and immediately adjoining the facility boundary to be removed and appropriately disposed within two months of the date of grant of the licence.

(d) Dust

- *Assertion by applicant that dust is not a problem is rejected as it is one of the main reasons that residents want the site closed*
- *If the application was to go ahead the residents would have to endure 5 more years of odours, dust and pollution*

Response:

Condition 6.8 specifies the dust control measures to be implemented at the facility and Condition 9 requires dust monitoring to be undertaken three times per year at locations around the perimeter of the facility. Emission limit values for dust emissions associated with the operation of the facility are set in Schedule G –Emission Limits.

(e) Noise

- Noise from traffic entering and leaving the site
- Noise from the compactor and other equipment operating on site

Response:

Emission limits for noise emanating from the operation of the facility are specified in Schedule G: Emission Limits

2. Site Security

- Lack of security at the gates to the facility has resulted in fly-tipping around the entrance outside of working hours.
- Use of shotguns at the landfill.
- Burned out cars at the landfill.

Response:

Scavenging is prohibited by the licence and this will be facilitated by the security arrangements required by the licence. Condition 4.4 specifies the site security fencing at the facility. See also response under Section 1 (c) Litter in relation to fly-tipping.

3. Traffic/Roads

- The roads to the dump and the vicinity of the dump entrance have become increasingly hazardous to pedestrians and motorists due to traffic generated by the landfill.
- Roads covered with mud due to heavy earthmovers using the landfill site. Some local children have to be driven to school instead of walking as the roads are covered in mud and debris.
- Increase in traffic on the Ballybeg Road due to its use as a bypass route by traffic to Ballybeg to avoid the traffic lights at the Ballybeg/Cork road junction.
- The absence of public footpaths and lighting has made this road extremely dangerous for pedestrians and motorists in particular for children who walk this road on a daily basis.
- Clay on the roads from the landfill site greatly increase braking distances and is a risk of accidents.

Response:

Condition 6.2 requires the facility and its immediate surrounds to be inspected for nuisances caused by vermin, birds, flies, mud and dust and odours. Written records are required to be made of these inspections and any actions taken as a result of these inspections. All vehicles delivering waste to the facility are required to be suitably covered. All waste vehicles including vehicles delivering clay and other materials for site development and site restoration are required to use the wheelwash prior to exiting the facility. Condition 6.3 requires the road network in the vicinity of the facility to be kept free from any debris caused by vehicles entering or leaving the facility.

Traffic management and the provision of footpaths and lighting outside of the facility boundary is a matter for the local authority.

4. Leachate management

- No protection against seepage of leachate from the site as it is an old out of date site
- Landfill is unlined with a lack of leachate collection hence, prevention of groundwater and surface water pollution cannot be effectively carried out.
- Leachate has been detected in the streams surrounding the site
- One submission questions the suggestion by the applicant that the quantity of leachate produced at the facility will be reduced with the construction of the proposed new lined cells and states that leachate will continue to discharge to groundwater. It also states that it is difficult to see how the construction of lined cells on top of an old unlined dump which is on top of a bog on a site which is subject to tidal flooding could result in a reduction in the rate of leachate production at the site.
- The authors of one submission refer to a statement in the Ecological Survey Report which accompanies the application. The statement refers to the landfill site being “a potential source of leachate for years to come” and recommends that “effective measures are taken to contain the leachate so as to prevent any further deterioration in the quality of the surrounding waters.” The authors express their agreement with this statement and state that it would be inappropriate for the Agency to grant the licence.

Response:

The site does not have any leachate, groundwater or surface water management system in place at present. Waste is currently deposited within unlined areas. The Draft PD, however, restricts waste

disposal to within lined cells only. Condition 4.15 –Leachate and Groundwater Management requires significant works to be introduced at the facility for the collection, abstraction and storage of leachate prior to discharge to sewer or alternative offsite treatment. Condition 4.15 also requires a groundwater management plan for the protection of groundwater resources in the vicinity of the facility to be implemented. Condition 4.19 requires the licensee to ensure the effective control of surface water runoff from the facility.

The leachate management requirements of the licence will reduce significantly the potential for leachate generated within the facility to result in groundwater contamination. Condition 9 requires an extensive environmental monitoring programme for surface water, groundwater and leachate to be undertaken within and in the vicinity of the facility. This includes the requirement for all private wells within 500m of the facility boundary to be included in the monitoring programme. See also Section 5 Emissions to Groundwater –Groundwater quality of the Inspectors Report.

5. Landfill gas

- Odour from landfill gas
- The authors of one submission states that Waterford Corporation should take greater steps to reduce emissions from the Kilbarry landfill which are contributing to national emissions of greenhouse gases

Response:

See response under Section 1(a) Odour. Landfill gas management at the facility will comprise the active abstraction, collect, flaring and utilisation of landfill gas which is required to be installed and commissioned within twelve months of the date of grant of the licence. In addition, a landfill gas-venting trench is required to be installed along the eastern and northern facility boundary.

6. Groundwater/Surface Water

- Regionally important aquifer underneath the site being contaminated by leachate
- There are two major water sources located near the landfill site, one of which is a public supply, the other is an industrial water supply with a reportedly excellent yield. There are also springs adjacent to the north-western corner of the site
- Contamination of both surface and groundwater has not been adequately addressed in the information provided by the applicant
- One submission states that Waterford Corporation is responsible for preventing pollution in the Lisduggan stream and reference in the application to the Lisduggan stream being seriously polluted before it reaches the dump does not take way from the responsibility of the Corporation to prevent pollution of the Lisduggan Stream.
- Local streams, and land drains which feed into them, serve agricultural lands where they provide a water supply for grazing livestock.
- Chemical monitoring results indicate that the Johns River receives significant pollution where it flows parallel to the landfill site.

Response:

Significant additional information as requested by the Agency was submitted by the applicant on 30 March 2000 on a range of issues including leachate management, surface water and groundwater quality and the impact of the existing and the proposed continued operation of the facility on surface water and groundwater resources. Further information was submitted by the applicant on leachate management and surface, groundwater and leachate monitoring results on 6 September 2000. See also response under Section 4 -Leachate Management and response under Section 9 Impact on Kilbarry Bog proposed Natural Heritage Area. In addition, see Section 5 -Emissions to Groundwater and Section 6 –Emissions to Surface Water of the main section of this report. Condition 7 of the Draft PD controls emissions to surface water. Conditions 4.15 and 4.19 specify the requirements for

“Leachate and Groundwater Management” and “Surface Water Management” respectively at the facility. Waste is currently deposited within unlined areas. The Draft PD, however, restricts waste disposal to within lined cells only

7. Visual Impact

- Landfill is visible from local houses and resembles a mountain of waste.
- Landfill is much higher than the surrounding lands and is continuing to get higher. One submission asks how high do the council think they can pile rubbish
- Contrary to information provided by the applicant the submitter states that the landfill obstructs views from residential areas as its extreme height dominates the surrounding landscape.

Response

Condition 1.4 restricts the annual quantity of waste permitted to be disposed of at the facility to 75,000 tonnes per annum. The Proposed Decision restricts the height to which waste for disposal will be permitted to be deposited at the facility to 15m O.D (Condition 5.4). Condition 5.1 restricts the areas within which waste for disposal is permitted to be deposited at the facility. Condition 8.1 requires a Restoration and Aftercare Plan to be submitted and this includes proposals for perimeter planting.

The restriction imposed on the height to which waste is permitted to be deposited at the facility and the area within which waste for disposal is permitted to be deposited restricts the remaining void space available at the facility for disposal This will have implications on the remaining life expectancy of the facility.

8. Health

- Hazards and public health risks associated with the continued operation of the landfill have not been adequately addressed by the applicant.
- Health hazards associated with nuisances such as litter, odour, vermin and dust

Response:

The licence will exert strict control over the operations of the existing facility including waste types to be accepted, leachate, landfill gas, surface water and ground water management and nuisance control. The operation of the facility in accordance with the conditions of the licence will reduce significantly the potential for the continued operation of the facility to result potential for hazards and public health risks. Condition 9 requires an extensive environmental monitoring programme to be undertaken within and in the vicinity of the facility. Condition 8.1 requires a Restoration Plan to be submitted to the Agency for approval. Once agreed the site will be restored in accordance with this Plan.

9. Impact on the Kilbarry Bog proposed Natural Heritage Area

- The general area has been designated as a Natural Heritage Area by Duchas
- The operation of the landfill may be having a detrimental impact on the nearby Kilbarry Bog proposed Natural Heritage Area and as a result damaging its conservation value.
- Kilbarry Bog was designated as an Area of Scientific interest in 1972 and has been almost completely destroyed by the dump. Waterford Corporation should not be given further opportunity to further degrade the pNHA. Reference is made in the Ecological Survey accompanying the application that the pNHA is showing signs of eutrophication and that the landfill is considered a causative agent. These ecological grounds alone provide sufficient reason to shut down the Kilbarry dump.
- Potential of Ballynakill Marsh to be developed as a nature reserve

- Considerable habitat destruction has taken place as a result of the expansion of the landfill site
- The ecological report appended to the waste licence application states that the landfill facility has totally obliterated a wetland of ecological and botanical importance, and the loss of this habitat is considered to be of high significance
- Duchas site synopsis states that “The former extent of the wetland has been reduced by municipal rubbish dumping and subsequent reclamation to the north. Thus the value of the site in a local context is unquestionable, and its quality as a habitat may warrant a status greater than of local importance. In the past this wetland has suffered serious damage. It is essential that the value of this site is now recognised and respected.
- The channel which surrounds most of the landfill floods along the margin of the Kilbarry reed beds thus there is potential for polluted water to disperse to the entire wetland system and there is evidence to date of the system receiving excess nutrients some of which may be derived from the landfill

Response:

See response under Section 4 –Leachate Management in relation to groundwater, surface water and leachate management and the environmental monitoring programme required to be undertaken at the facility. The ecological assessment accompanying the application makes reference to evidence of eutrophication of Kilbarry Bog, as reported by Duchas scientific staff following a site visit a number of years ago. Condition 8.2 requires the restoration and aftercare plan for the facility to include details of the ongoing protection of the habitats within and immediately adjoining the Kilbarry Bog pNHA. Condition 9 requires an annual ecological assessment of the Kilbarry Bog and associated habitats including watercourses. The scope of this assessment is required to be agreed in advance with the Agency.

10. Proximity to local Residents and amenities

- Approximately 95 houses are located within 250m of the site and a substantial number within 1000m. Two further large-scale developments to the south east and south west of the site are planned and these developments will contain an estimated 1,700 houses between them
- There is a recreation hall and a number of sports grounds within 500m of the site
- The landfill is 50-60m away from one resident. Traffic associated with the site bottles, cans, bulbs, fluorescent tubes and other items, which generate noise, are stated to have had a bad effect on her quality of life. It is stated that this resident had a stroke last year and needs to rest but is unable to do so because of the noise generated by the dump.

Response:

The Inspector notes the proximity of the facility to residential properties and amenity facilities. See response under Environmental Nuisances in relation to the measures specified in the Draft PD for the control of environmental nuisances associated with the operation of the facility.

Schedule G specifies the emission limits for noise levels emanating from the facility. Condition 4.20.2 requires the glass recycling container to be relocated away from the boundary wall with this property to reduce the potential for noise nuisance at this property.

11. Landfill management past and present

- Chemicals from Waterford crystal are being dumped at the site
- Site past capacity to accept anymore waste. Residents were advised by councillors the landfill was closing
- Increase in number of people using landfill as population of Waterford increasing

- Significant amounts of industrial wastes have been accepted at the landfill so it is reasonable to assume that some potentially harmful substances have been deposited over the years. Substances like organochlorine pesticides are potentially harmful to various flora and fauna
- Danger of collapse of the earthen bunds due to high pore pressure in the bund walls. The bunds appear to have been constructed without proper means of relieving this pressure. No details are provided on the remedial measures to be carried out in the event of slippage or movement of any of the slopes on the site. The submitter called for a considerable reduction in the steepness of these slopes, together with an overall lowering of the height of the landfill, and softening of the contours.
- One submission calls for the landfill to be closed and the waste that has been dumped to be treated.
- Requirement for an EIS to be submitted with the application.
- Fires at the site.

Response

Condition 1 specifies the nature and quantity of waste permitted to be accepted at the facility. The implementation of the conditions of the licence will exert strict control over the operations of the facility including waste acceptance, facility management, leachate, landfill gas, surface water and ground water management, nuisance control and environmental monitoring. Condition 8.1 requires a Restoration Plan to be submitted to the Agency for approval. Once agreed the site will be restored in accordance with this Plan.

Lime precipitated sludges are accepted at the facility from Waterford Crystal. The Draft PD requires the sludge disposal area currently used at the facility to be decommissioned and closed. Condition 5 controls the future disposal of sludges and restricts the total quantity of sludges to be disposed of at the facility. This includes limiting sludges permitted to be accepted at the facility to treated industrial non-hazardous sludges and treated sewage sludges. Sludges arising from the Waterford Crystal plant are included in the treated non-hazardous sludge component accepted at the facility. Condition 5.7.2 requires a proposal to reduce the quantity of sludges to be accepted at the facility.

I note the comment in relation to the increase in the number of people using the facility. This is a reflection of the increased population in the catchment of the facility.

Condition 9 requires an ecological survey of the habitats and associated species within the Kilbarry Bog pNHA. See also response under Section 4 Leachate management.

Condition 9 requires an assessment of the side slopes of the facility and also requires the perimeter embankment of the facility to be inspected monthly for any evidence of slippage or failure. Any defects to the side slopes or to the perimeter embankment observed would be required to be repaired. Condition 8.1 requires a Restoration Plan to be submitted to the Agency for approval. Once agreed the site will be restored in accordance with this Plan. Condition 9 also requires an extensive environmental monitoring programme to be undertaken within and in the vicinity of the facility.

On the basis of information submitted by the applicant, the quantity of waste accepted at the facility prior to the implementation of the EIA Directive in Ireland already exceeded the quantity that required an Environmental Impact Statement (EIS) to be prepared. It is the view of the Inspector that any increase above the annual waste quantity and the landfill areas permitted in the Draft PD would require an EIS to be submitted along with an application for a review of a waste licence.

Condition 10.4 prohibits the burning of waste at the facility. In the event of a fire occurring at the facility this would be treated as an incident.

12. Unsuitability of site and planning issues

- Site is intrinsically unsuitable
- From a planning and land use prospective, any expansion of the landfill or continuation of its current operation, would constitute a conflicting and unsuitable land use.
- Local property value has dropped while elsewhere it has risen. The continued operation of the landfill will result in further damage to business and reduction in property values.

- Waterford Corporation should be required as a condition of the licence to cease depositing refuse at the site, to take appropriate measures to prevent the spread of leachate and to decontaminate the existing drains and streams surrounding the landfill. The submitter suggests that proper planning of the city's expansion should make provision for some public open space which is not directly used for sport and it is suggested that a decontaminated and remedied landfill site at Kilbarry will provide such an opportunity.
- Reference is made to a proposed decision issued by the Agency in regard to Clare County Council Landfill site 31-1 where according to the submitter there is a precedent for issuing a waste licence which requires the licensee to continue monitoring and rehabilitation of the site, but which prohibits any future disposal of waste.

Response

The Inspector notes the comment in relation to the unsuitability of the site the damage to property and the devaluation of property. The licence will exert strict control over the operations of the facility including waste acceptance, facility management, leachate, landfill gas, surface water and ground water management, nuisance control and environmental monitoring. Condition 8.1 requires a Restoration Plan to be submitted to the Agency for approval. Once agreed the site will be restored in accordance with this Plan. The continued operation of the facility will be restricted to the facility boundary as defined in Condition 1.2 of the Draft PD.

The restoration of the landfill as required by Condition 8.1 will facilitate the future use of the restored facility. The leachate, landfill gas, surface water and groundwater management and environmental monitoring programme required by the licence would continue to operate at the facility following closure and during the restoration and aftercare of the facility. The final end use of the facility will take into account the existing landuse zoning policies of Waterford Corporation.

The Inspector notes the comment in relation to the issuing of a licence which requires prohibits the disposal of waste and requires the rehabilitation of the landfill site in question. See response in relation to the operation and restoration of the facility under this section. Condition 8.1 requires the restoration plan to address the ongoing protection of the habitats within and immediately adjoining the Kilbarry Bog pNHA. See also response under Section 9- Impact on Kilbarry Bog proposed Natural Heritage Area.

13. Flooding and drainage problems

- The location of the site on a floodplain and the impact of the continued operation of the dump on flooding of the Tramore Road and surrounding lands.
- Flooding of the Tramore road caused by the landfill in combination with high tides and heavy rainfall is a traffic hazard and a nuisance.
- Water flows in the surrounding streams have been significantly impeded and flooding of the Tramore road has become worse since the landfill has been extended
- Increase in the water table has damaged percolation area of local residents septic tanks
- One submitter believes that if a hydrological study were to be carried out, the results would show a connection between the landfill and the flooding
- The applicant has provided no substantial evidence to show that the landfill site has not been detrimentally affected by the local drainage pattern, in response to a request from the Agency to describe the implications of the landfill site on flooding of the Tramore road.

Response:

A study is currently being undertaken by the Office of Public Works in relation to flooding associated with the John's River in Waterford City. The brief for this study extends to the Tramore Road. This study will put forward proposals to alleviate flooding along the John's River.

Condition 4.19 requires the effective control of surface water run off from the facility during construction, operation and restoration.

14. Inadequate or incorrect information provided by the applicant

- The impact of the construction of new cells on top of the existing dump on the reduction and control of leachate associated with the existing landfill has not been addressed by the applicant. It is also stated in the submission that the estimates of leachate volumes provided by the applicant do not take into account leachate being generated in the present unlined section of the landfill
- Waste figures provided in the application are incorrect. No allowance seems to have been made in the application for an increase of waste arisings over the remaining five-year operational capacity of the site. They state that an annual increase of 3% is suggested in the Waterford Waste Management Plan and this has not been taken into account in the application.
- According to the waste licence application, the present landfill is approximately 30 years old, but landfilling is stated as having taken place on adjacent ground “up to 60 to 70 years ago”
- In response to the Agency’s request for details of the alternatives to landfilling which have been considered by the applicant no details on any of the proposals were supplied.
- No details of the sewage treatment system are provided, and it is clearly unacceptable to discharge to the estuary any effluent likely to contain substances banned under EU Directives.
- According to the applicant there are no major flood plains in the vicinity of the landfill but this is disputed by the submitter who states that the landfill is located within a well-defined flood-plain in conflict with the current draft EPA guidelines for landfill siting.

Response:

Condition 4 specifies the leachate and landfill gas management systems required to be installed and maintained at the facility. The proposed systems will cater for leachate and landfill gas emissions generated within the facility boundary.

During the consideration of the application, updated waste volumes were submitted to the Agency. I took these volumes into account in considering the application.

Landfilling took place outside the facility boundary prior to 1960 and between 1960 and 1980. The applicant has submitted a drawing showing the areas within which waste was previously deposited in the immediate vicinity of the landfill. I have recommended that the Agency write to Waterford Corporation requesting that these historical landfill areas be investigated with particular reference to the risk of environmental pollution due to leachate and landfill gas generated within these areas .

The response by the applicant in relation to alternatives to landfilling makes reference to the commissioning of a recycling centre and the composting of organic waste at the facility. The Draft PD includes a requirement for proposals for the recovery of construction and demolition waste, commercial waste including cardboard and the separation of recyclable materials from the waste to be submitted. In addition, the operation of a civic waste facility for the storage of a range of recyclable wastes is included in the Draft PD.

The proposed wastewater treatment facility for Waterford City has not yet been constructed. Condition 4.15 specifies the leachate management system to be installed and maintained at the facility. The agreement of the Agency and the Sanitary Authority would be required to be obtained prior to the offsite transport of leachate at the facility for treatment at a waste water treatment plant.

The Inspector notes the comments in relation to the presence of a floodplain within and in the vicinity of the landfill. The Kilbarry landfill is an existing facility and has been operational since the early 1970’s. The current draft EPA guidelines for landfill siting relates to proposed new landfill sites. See also response under Section 9 Impact on the Kilbarry Bog proposed Natural Heritage Area.

15. Incompatibility with national and local policy

- The application to extend the life of the landfill would be a material contravention of the current Waterford City Development plan.
- The last sentence of the Non Technical Summary is in conflict with Waterford Corporation’s policy of sustainable development regarding waste management.

- The South East Regional Authority Waste Management Strategy Plan states that three landfill sites in Waterford city and County are due to close as soon as an alternative is established. It also quotes the estimated life expectancy of the dump to be less than three years and based on this figure in 1998 the life span (at the date of their submission) is two years. It is requested in the submission that the Agency close down the dump in the next twelve months or sooner if possible.
- To apply for a waste licence to extend the landfill, while failing to implement alternative measures to control waste production, would be contrary to the waste management hierarchy and to European and Irish waste management policy

Response:

I note the comments in relation to the current Waterford City Development Plan and the last sentence of page 13 of the Non Technical Summary of the application. This relates to the contribution of emissions of landfill gas from the facility to total national emissions of greenhouse gases and the impact of these on global climate. Landfill gas management at the facility is specified in Condition 4.16.

I note the comments in relation to the closure of three landfill sites in Waterford City and County and the estimated life expectancy of the Kilbarry landfill and the request to close the landfill. It has been recognised by Waterford Corporation for some time that the Kilbarry landfill has a finite life. In addition the need to develop a new facility is the subject of investigations by the Corporation and consultants acting on their behalf.

I have taken into account the information submitted in the application in relation to the life expectancy of the facility and the waste quantities for disposal in considering the application and in preparing the Draft PD. See response under Section 7 –Visual impact in relation to restrictions on waste quantities to be accepted at the facility and the height to which waste for disposal is permitted to be deposited at the facility. The Draft PD allows the continued operation of the facility only subject to the conditions attached therein. The licence will exert strict control over the operations of the facility including waste acceptance, facility management, leachate, landfill gas, surface water and ground water management, nuisance control and environmental monitoring. Condition 8.1 requires a Restoration Plan to be submitted to the Agency for approval. Once agreed the site will be restored in accordance with this Plan.

The application for a waste licence for Kilbarry landfill is for the continued operation of the facility and does not include an extension to the existing landfill facility.

16. Request for update on status of licence

- A number of submissions requested an update on the status of the licence application and the timeframe with regard to submission periods. One submitter requested to be informed of the above as he wanted to proceed with plans for his property
- There was also a request that notification be given to a submitter when the application by the County Council was received by the Agency.
- One submission asks if Waterford County Council can continue to dump without a licence

Response

The Agency advised the submitters that the application was open to submissions from any persons, the timeframe during which submissions could be made and that they would be informed in writing when the relevant submission period would begin. The application for a waste licence was made to the Agency in September 1997. Having made a waste licence application to the Agency within the relevant time frame specified in the Waste Licensing Regulations a waste facility is permitted to continue operating. Once a licence is issued by the Agency the facility will be required to operate in accordance with the conditions of the licence.

Signed _____

Dated: 08 February 2001

Tadhg O'Mahony

APPENDIX 1

LOCATION PLAN AND SITE LAYOUT PLAN

APPENDIX 2:

KILBARRY BOG PROPOSED NATURAL HERITAGE AREA (pNHA)

APPENDIX 3

HISTORICAL LANDFILLING AREAS

APPENDIX 4

ENVIRONMENTAL MONITORING LOCATIONS &

CATCHMENT PLAN & EPA WATER MONITORING SITES

APPENDIX 5
SUBMISSIONS