

**APPLICATION TO IRISH WATER**

**FOR**

**CONNECTION TO FOUL SEWER**

**AT**

**DUNDALK LANDFILL,**

**NEWRY ROAD,**

**DUNDALK**

**ON BEHALF OF**

**LOUTH COUNTY COUNCIL**

**PREPARED BY**

**DAMIEN HOLMES**

**Louth County Council**

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## Site Location

The site is located approximately 600m north of Dundalk Town Centre. The southern boundary of the site is defined by the Casteltown River and estuarine mudflats. To the immediate north and northeast of the site are a ready mix concrete/sand and gravel yard and rough grassland. To the east the site is bounded by the Dundalk Eastern Bypass (N52). To the west the landfill is bounded by the Recycling Centre and residential and commercial properties. See Appendix 1 – Site Location and Aerial Photo.

## Site History

Dundalk landfill has officially been operated since 1963, although reports suggest waste importation commenced before this period. Infill pattern was simply advancement into the Slob lands intertidal mudflats from the Newry Road end. The site was an unlined landfill and operated as a dilute and dispersion site.

The site accepted between 32,000 – 38,000 tonnes/annum of municipal waste between 1997 and 2001. These rates are considered representative of the filling rate over the lifespan of the facility. The landfill ceased to accept waste in October 2002 and was restored in 2006.

The body of the landfill has an area of approximately 10.5 hectares; this is shown on the Aerial Photo in Appendix 1, as the area delineated by the extent of the band of trees planted on the side slopes of the landfill. The plateau of the site is 7.5 hectares in area and has grass established over the entire area. The plateau of the site is capped with an impermeable layer (1mm LLPDE plastic) and one metre of soils and associated surface water drainage. The side slopes, on which the trees are planted, do not have a plastic barrier layer but has in excess of 1m of compacted soils on which trees have been planted and successfully established for in excess of ten years.

Drainage from the lands to the north of the landfill flow in a southerly direction to the drainage ditch which flows along the northern boundary of the landfill. The drainage ditch along the northern boundary flows in a west to east direction along the northern boundary of the landfill. This drainage ditch also receives surface water runoff from the northern tree covered slope of the landfill. See Appendix 1 - Drawing No. 1 – Monitoring Locations.

Surface water in this drainage ditch is monitored as part of the Waste Licence Conditions for the landfill (W0034-02). It is monitored at four location SW1 being the most upstream location monitored and SW4 being the most downstream location monitored

## Requirement to Connect to Foul Sewer

Quarterly monitoring at SW1 to SW4 has detected elevated levels of Ammonia, BOD and Conductivity which are higher than would be expected in surface waters. This has been attributed to possible leachate outbreaks from the landfill.

The EPA has opened a Compliance Investigation against the Waste Licence for the landfill and has required investigations/measures to be taken to improve water quality in the northern drainage ditch.

Visual inspections of the northern drainage ditch between SW1 and SW2 show seepages of what is most likely landfill leachate. This is backed up by the monitoring results see appendix 3. Various options were assessed in order to determine what could be done to prevent this low level contamination of the northern drainage ditch. It was concluded that diverting the section of the drainage ditch between SW1 and SW2 to foul sewer via a Collection Channel would help to alleviate the issue.

A proposed design for the Collection Channel is shown on Drawings IBR0785 003 and 004 in Appendix 2. Appendix 2 also shows the Zone of Contribution for the proposed Collection Channel.

The design involves constructing a 110m long Collection Channel to replace the existing drainage ditch between SW1 and SW2. A new Open Ditch will be constructed on the adjoining property, up gradient of the landfill, to collect any runoff from up gradient. This will reduce the surface water volume entering the new Collection Channel and will also eliminate the risk of any contaminated runoff from up gradient. A pumping sump is included to provide the ability to monitor flow and obtain a flow proportional sample.

## Proposed Discharge

### *General Analysis*

A summary of the quarterly monitoring results for Ammonia since 2004 is included in Appendix 3. It is considered that the proposed discharge would have similar characteristics to the SW1 or SW2 monitoring results. Data for additional parameters such as BOD, Conductivity etc. is supplied in Excel format (SW Trends 2004 to 2015).

These results were previously submitted to Irish Water via Louth Co Co Water Services in 2015. It was assessed by Irish Water that the proposed discharge would have a negligible, "possibly not ever measureable" impact on the treatment plant in terms of Ammonia loading (see attached chain of emails in Appendix 4).

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### ***Priority Substances***

On foot of Irish Waters Concerns raised in the email of 10/12/15 in relation to Priority Substances (See Appendix 4) monitoring was carried out and submitted to Water Services in Louth County Council on 9/3/16. It is our understanding that the concentrations of priority substances detected would not impact on the operation of the treatment plant. Results of Priority Substance Monitoring are provided in Appendix 5.

### ***Dissolved Methane***

A meeting was held with Irish Water (Morgan Cox, Dara White and LCC - Peadar McGuinness) on 13/5/16 to discuss this proposed application. At the meeting it was suggested that the possibility of the presence of methane in the proposed discharge should be investigated. A sample of the proposed discharge was taken on 25/8/16. Results show that dissolved methane was not detected above the detection limit of 0.03 mg/l. Results are provided in Appendix 6.

### ***Flow Rate***

There is no flow monitoring data available from the existing drainage ditch. An estimate of the existing flow previously used a figure of 0.5l/s. However, on revision this would seem to be an over estimate. The section of drainage ditch which is proposed to discharge to Foul Sewer is dry much of the summer months and only has a low flow during rainfall events.

In addition the installation of the Open Ditch up gradient of the proposed Collection Channel (See Appendix 2) will intercept most of the base flow in the ditch and continue to discharge it to the drainage ditch down gradient of the new Collection Channel.

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**Appendix 1**

**Site Location Map**

**Aerial Photo**

**Monitoring Locations**

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**Appendix 2**

**Proposed Design of Collection Channel  
And  
Zone of Contribution**

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## **Appendix 3**

### **Ammonia Monitoring Data 2004 – 2015**

**Additional Parameters supplied in Excel Format**

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## Appendix 4

### Chain of emails in relation to previous assessment by Irish Water

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## Appendix 5

### Priority Substances Results

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## Appendix 6

### Dissolved Methane Results

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