

ATTACHMENT I.4
EXISTING ENVIRONMENT & IMPACT OF THE ACTIVITY – GROUNDWATER
AND SOILS

*For inspection purposes only.
Consent of copyright owner required for any other use.*

I.4 Hydrogeology

There have been no detailed site investigations carried out at the Goff Recycling Ltd site as part of this Waste Licence application.

I.4.1 Geology

I.4.1.1 Regional Geology.

The following extract is taken from the 'Geology of South Wexford' booklet No 23 as published by the Geological Survey of Ireland (GSI).

'Most of the South Wexford area forms the southern end of the Leinster Massif, a complex region of Precambrian and lower Palaeozoic rocks. Structurally, the Lower Palaeozoic and Precambrian rocks fall into three north easterly trending belts, separated by major faults. These faults are repeatedly cut and displaced by younger, north or north-north westerly trending minor faults giving irregular, stepped margins.'

It is known that the rocks in and around Rosslare Harbour are some of the oldest in Ireland. According to the GSI, these Precambrian rocks form an area of 120 square kilometres of low-lying, flat country projecting into the Irish Sea south of Wexford Town. They are highly and repeatedly deformed and metamorphosed rocks and form the Rosslare Complex.

I.4.1.2 Local Geology

The local geology of the area comprises of the Rosslare Complex which is subdivided into two major units, the Kilmore Quay Group of grey gneisses and the Greenore Point Group of dark green amphibolites and metagabbro. According to the GSI *'the complex is not well exposed, except in a number of coastal sections, because of a thick cover of unconsolidated Quaternary sediments. The grey gneisses can be examined at Kilmore Quay, the amphibolites along the beaches around Rosslare Harbour and between the harbour and just south of Greenore Point, and the metagabbro around St Helen's Harbour'* (approximately 2 km south east of the Goff Recycling Ltd site).

The Greenore Point Group is made up largely of a thick sequence of dark green amphibolites which are finely foliated thereby losing all observable evidence of their origin. At St Helen's the amphibolites have not been completely foliated but retain the texture of a coarsely crystalline gabbro (also called metagabbros).

In addition, two isolated groups (namely Tagoat and Tuskar) form small outcrops overlying the Cambrian Ballycogly Group and the Rosslare Complex in the southeast of the area.

However for the purpose of this study, the underlying geology of the Goff Recycling Ltd site is that of the Greenore Point Group. Map I.4 illustrates the immediate geology surrounding the Goff Recycling Ltd's site.

I.4.1.3 Local Soil Character

There was no actual site examination of the soil surrounding or underneath the site. At present most of the site is covered in concrete with the remainder being hardcore surfaced.

I.4.2 Hydrogeology

The Wexford County Development plan recognises all potential ground water protection sources and major aquifer protection zones in the County. A summary of these important locations is given in Appendix 10. In addition, Wexford County Council have formulated the following table regarding the control of certain activities near to aquifers and ground water sources.

AQUIFER PROTECTION ZONES	
ZONE 1 – SOURCE PROTECTION ZONE	
Sub Zone 1A	
EXTENT	10m from public ground water abstractions.
STATUS	Fixed.
PROHIBIT	All activities with any degree of pollution risk.
Sub Zone 1B	
EXTENT	100m from public ground water abstractions.
STATUS	Variable with geological conditions.
PROHIBIT	Septic tanks. Soakaways of any type. Spreading of sewage sludge. Burial grounds. Waste disposal sites. Storage of industrial chemicals. Storage or disposal of farm chemicals. Foul sewers or house drains.
CONTROL	Application of fertilisers. Spreading of manure or slurry.
Sub Zone 1C	
EXTENT	250m from public ground water abstractions.
STATUS	Fixed.
PROHIBIT	Waste disposal sites. Storage of industrial chemicals. Intensive agricultural developments. Construction of waste liquid ponds.
CONTROL	Construction of soak pits. Use of farm chemicals.

Sub Zone 1D	
EXTENT	100m from surface water courses and areas vulnerable to ground water pollution.
STATUS	Fixed.
PROHIBIT	As in sub zone 1B
CONTROL	As in sub zone 1C
Zone 2 – Major Aquifer Protection Zone	
EXTENT	Area underlain by major aquifer.
CONTROL	Waste disposal sites. Storage of Industrial and farm chemicals. Construction of waste liquid ponds. Intensive agricultural developments. Construction of septic tanks; one acre sites. Use of farm chemicals. 1 acre sites for conventional sites only.

After a review of the County Development plan and Appendix 10 attached, it is evident that the nearest ground water protection source or major aquifer protection zone to the Goff Recycling Ltd site is the South Regional Groundwater Based Supply Scheme approximately 8km north west of the site. The nearest major aquifer areas to the site are illustrated in Map I.4.1 attached.

Goff Recycling Ltd and all residences in the area are served by a municipal mains supply.

The existing facility and proposed future developments to the facility are considered to have a low risk to groundwater. Only solid, dry and non-hazardous waste will be handled at the facility and all of the areas of the facility where waste will be handled and stored will be either indoors or outside areas surfaced with concrete. This will effectively protect the underlying soil and groundwater.

As part of the future site developments, the new facility will also include a series of water pollution control measures as follows:

- an upgrade to the existing storm water drainage system
- a separate treatment system for the sewage effluent from the facility
- on-site collection and treatment of the leachate and washings from the Unit 3 waste acceptance building

Detailed descriptions of this water pollution control measures are given in Attachment F.