### 2.6.7 Review of Four Selected Sites in Ringaskiddy

With the prerequisite of investigating industrial zoned lands only it was clear from early in the investigations that the most suitable options would be in an area with existing industries. As previously discussed, of all the existing industrial areas in Cork Harbour, the Ringaskiddy area represented the best option for siting the proposed facility.

Some of the advantages and disadvantages in choosing Ringaskiddy as the location for the waste management facility are provided below.

*Advantages of Ringaskiddy*

- an existing highly industrialised area with considerable land availability for further industrialisation
- two existing pharmaceutical companies in the Ringaskiddy area already have incineration facilities on-site, which are licensed by the EPA
- highly skilled workforce available close by
- located on a good road network
- serviced area (electricity, gas, water, effluent discharge)
- close to the main sources of hazardous waste generated in Ireland.

*Disadvantages of Ringaskiddy*

- part of the industrial land is currently only accessible via Ringaskiddy village
- Ringaskiddy village is located in the middle of the industrialised area – small housing developments on the outskirts of the village are located relatively close to the industrial land
- schools located close to Ringaskiddy village
- existing high traffic volumes at peak times
- close to Currabinny Woods and Cork Harbour (amenity areas)



Over a period of six months various locations in Ringaskiddy were investigated and during this time four separate potential sites were identified. Figure 2.8a and Figure 2.8b show these locations.

The locations were as follows:

**Site 1:** Irish Ispat Ltd. owned land surrounding the Hammond Lane metal recycling company.

**Site 2:** Irish Ispat Ltd. owned land – reclaimed land on the left hand side of the road between the entrance into Irish Ispat Ltd. and the bridge over to Rocky Island.

**Site 3:** Privately owned land to the left-hand side of the road at the entrance to GlaxoSmithKline.

**Site 4:** Privately owned land to the right-hand side of the road between Ringaskiddy village and Pfizer, LoughBeg.

Figures 2.9a and 2.9b identify sensitive locations in Ringaskiddy and their proximity to the four sites. Tables 2.9 and 2.10 below identifies the various criteria used in the evaluation of the four sites.

## Table 2.9 Comparison of Sites (Technical Aspects)

| *Criteria* | *Site 1*<br>*Irish Ispat Land surrounding*<br>*Hammond Lane.* | *Site 2*<br>*Irish Ispat – Reclaimed Land* | *Site 3*<br>*Site next to GlaxoSmithKline Entrance* | *Site 4*<br>*Site near to Pfizer LoughBeg* | *Preferred location with regard to set criteria.* |
|---|---|---|---|---|---|
| **Land Ownership** | Irish Ispat Ltd. | Irish Ispat Ltd | One private owner. | Several private owners. | Either of ***Sites 1-3,*** because of single ownership. |
| **Availability of Land** | Land was put up for Auction in late 2000. | As for Site 1. | Owner was approached but was unwilling to sell. | Owners not approached. | ***Sites 1 & 3*** due to their availability on the market place |
| **Approximate Site Area.** | 30 acres | 12 acres | 40 acres | 10 acres | ***Sites 1-3,*** as Site 4 may be too confined. |
| **Land Zoning** | Substantial proportion of the land is zoned industrial. | Zoned Industrial . | Part of the southern end of the site was not zoned – remainder of site, industrial. | Zoned Industrial | No preference as all land zoned industrial apart from a small section of Site 3. |
| **Land Description** | Poor agricultural land – parts rented to farmer for grazing. About 30% of the land is sloping or on top of a hill. | Reclaimed land – unsuitable for agricultural use. | Good agricultural land – one large field. Slopes down towards the shore of LoughBeg. | Agricultural land made up of many small fields. | ***Sites 1 & 3*** – the slopes on these sites could be used to cater for the waste collection hall. |




INDAVER IRELAND Ringaskiddy waste management facility

Environmental Impact Statement

ARUP Consulting Engineers

Files Located : J:/jobs/796/graphics/EIS figures

Ordnance Map : Ordnance Survey Ireland Licence No. EN 0002801 © Government of Ireland

Figure Title : Site Locations in Ringaskiddy

Figure No : 2.8b




INDAVER IRELAND Ringaskiddy waste management facility

Environmental Impact Statement

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Ordnance Map : Ordnance Survey Ireland Licence No. EN 0002801 © Government of Ireland

Figure Title : Site Locations in Ringaskiddy

Figure No : 2.8b




INDAVER IRELAND Ringaskiddy waste management facility

Environmental Impact Statement

ARUP Consulting Engineers

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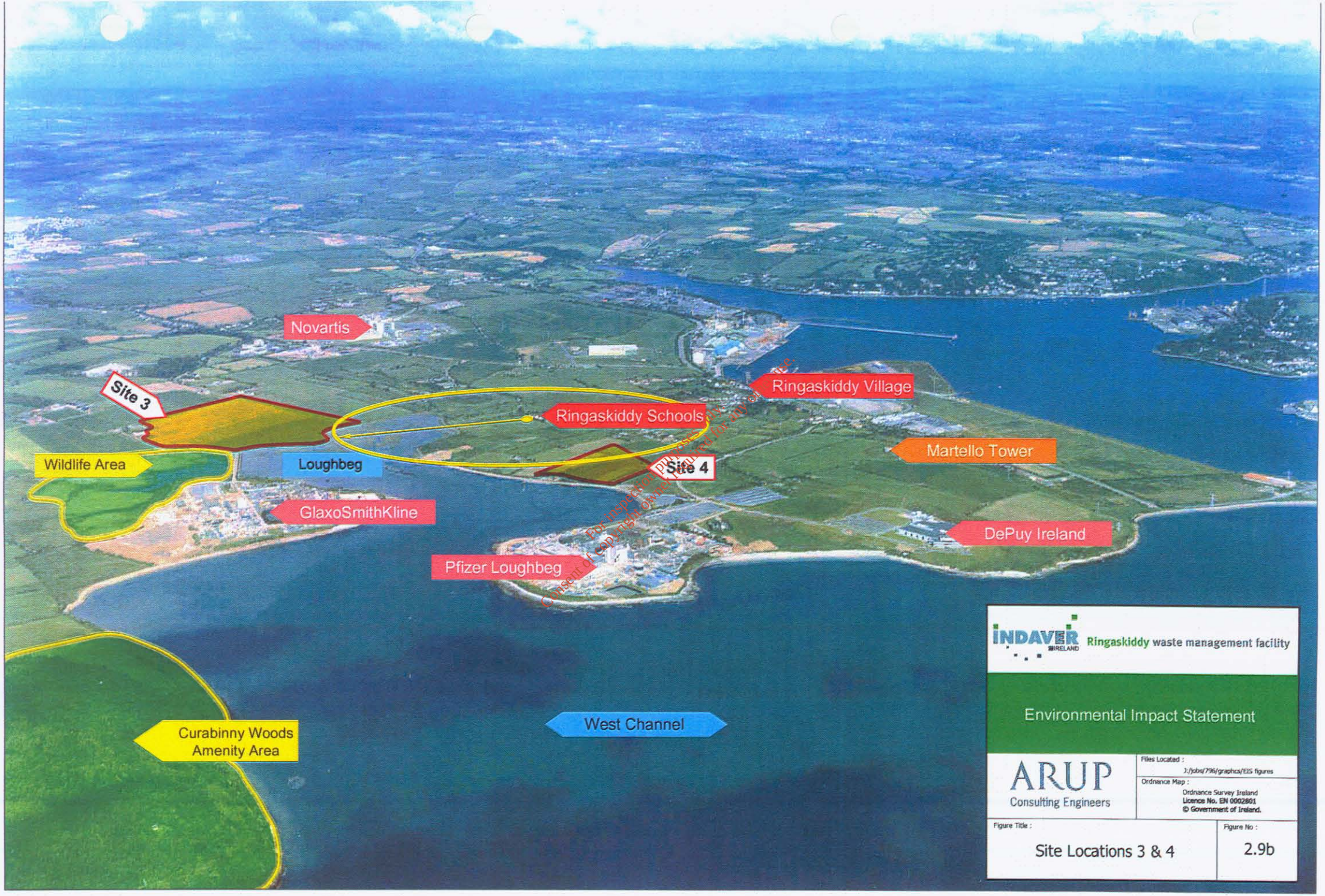
Ordnance Map : Ordnance Survey Ireland Licence No. EN 0002801 © Government of Ireland

Figure Title : Site Locations 1 & 2

Figure No : 2.9a



## Table 2.9 Comparison of Sites (Technical Aspects) – *Cont.*

| *Criteria* | *Site 1*<br>*Irish Ispat Land surrounding*<br>*Hammond Lane.* | *Site 2*<br>*Irish Ispat – Reclaimed Land* | *Site 3*<br>*Site next to GlaxoSmithKline Entrance* | *Site 4*<br>*Site near to Pfizer LoughBeg* | *Preferred location with regard to set criteria.* |
|---|---|---|---|---|---|
| **Land Accessibility** | Currently this site is only accessible via Ringaskiddy village. | As for Site 1. | Traffic can turn off just before Ringaskiddy village. | As for Site 1. | ***Site 3***, as traffic can avoid Ringaskiddy village.<br>However, if plans for a bypass of Ringaskiddy village go ahead then access to the other sites will be improved. |
| **Site Accessibility & Road Upgrade Requirements.** | Located on road between Ringaskiddy village and Haulbowline Island. Possibly some strengthening of road required. No additional access road required. | As for Site 1. | Located on the road to Currabinny Woods. Some road strengthening may be required. No access road required. | Located next to Ringaskiddy to Pfizer LoughBeg road. Small access road (<100m) would be required. | ***Sites 1, 2 & 3*** – Least amount of road works required. |
| **Electricity Supply & Substation Availability** | 38 & 220 kV supply next to site. Sub-station at Hammond Lane may be used but a further investigation by the ESB required. | Close to ESB supply as stated for Site 1. | 220 kV power lines crossing the site. Will probably need to connect into substation opposite Novartis (700m). | Will probably need to connect into substation opposite Novartis (1.45 km) | - |
| **Natural Gas Supply** | Bord Gais gas main located on-site. | Bord Gais gas main located next to site. | Bord Gais gas main located next to site. | Bord Gais gas main located next to site. | - |
| **Water Supply** | Large water main on roadway next to site with plenty of spare capacity. | As for Site 1. | Water main goes through the site. May need to be upgraded.. | Water main next to the site. May need to be upgraded. | ***Sites 1 & 2*** – no upgrade requirements. |

## Table 2.9 Comparison of Sites (Technical Aspects) – *Cont.*

| *Criteria* | *Site 1*<br>*Irish Ispat Land surrounding*<br>*Hammond Lane.* | *Site 2*<br>*Irish Ispat – Reclaimed Land* | *Site 3*<br>*Site next to GlaxoSmithKline Entrance* | *Site 4*<br>*Site near to Pfizer LoughBeg* | *Preferred location with regard to set criteria.* |
|---|---|---|---|---|---|
| **Foul Sewer** | The nearest foul sewer is located in front of Rock Farm House – close to site boundary. | The nearest foul sewer is located in front of Rock Farm House – 450m away. | The nearest foul sewer is located on the roadway outside of Novartis – would need to pumped to this sewer – 700m away. | The nearest foul sewer is located on the roadway next to the site – Effluent would need to pumped to this sewer – 30m away. | - |
| | *<u>Note:</u> Currently there is no separate treatment on the foul sewers entering Cork Harbour. A study, commissioned by Cork Co. Co. is investigating the possibility of constructing a separate treatment system to cater for Ringaskiddy, Carrigaline, Monkstown and possibly Passage.* | | | | |
| **Emergency Response** | All sites are within the Cork Emergency Response Plan area. The closest fire station is in Carrigaline (10 minutes) with back-up provided by Cork City (20 minutes). The nearest hospitals are in Cork City (20 minutes). | | | | |
| **Site Geology, Hydrology, Hydrogeology** | Groundwater beneath the site is affected by seawater influences. Some flooding, due to closeness of bedrock, can occur during the Winter months. Soil is suitable for construction of the proposed development. | As the land has been reclaimed it is likely that piling would be required for construction purposes. Underlying groundwater affected by seawater ingress. Parts of the site get flooded during the winter months. | Some bedrock outcrops. Underlying groundwater may be affected by seawater ingress. With the slope of the land it is not prone to flooding. Soil is suitable for construction. | Very wet ground in the Winter months indicating poor drainage and possibly bedrock close to the surface. It is likely that underlying groundwater is affected by seawater ingress. Piling may be required for this site. | ***Sites 1 & 3.*** |
| **Historical Soil Contamination** | Soil and groundwater analysis have shown the site to be uncontaminated. | No sampling was carried out on this site but as the land has been reclaimed and some storage of material has been carried out on it by Irish Ispat it may be possible for some contamination to be present. | This land has always been in agricultural use so soil contamination (apart from agricultural fertilisers) is unlikely. | As for Site 3. | ***Sites 1, 3 & 4.*** |

*Table 2.10 Comparison of Sites (Social Aspects)*

| *Criteria* | *Site 1* *Irish Ispat Land surrounding Hammond Lane.* | *Site 2* *Irish Ispat – Reclaimed Land* | *Site 3* *Site next to GlaxoSmithKline Entrance* | *Site 4* *Site near to Pfizer LoughBeg* | *Best location with regard to set criteria.* |
|---|---|---|---|---|---|
| **Distance to Ringaskiddy Village from site boundary.** | Ringaskiddy Village (Old Church) – 250m. | Ringaskiddy Village (Old Church) – 750m. | Ringaskiddy Village (Old Church) – 1.1 km. | Ringaskiddy Village (Old Church) – 700m. | ***Site 3*** – greatest distance away. |
| **Distance to closest sensitive location from site boundary.** | Ringaskiddy Schools – 850m. | Ringaskiddy Schools – 1.5 km. | Ringaskiddy Schools – 450m. | Ringaskiddy Schools – 500m. | ***Site 2*** – greatest distance away. |
| **Distance to nearest house from site boundary.** | 50m. | 420m. | 10m. | 10m. | ***Site 2*** – greatest distance away. |
| **Estimate of no. of houses within 500 ft of the site boundary (WHO guidelines) [1]** | 15 No. due to the construction of a new housing estate next to the western site boundary. ***Negative Rating*** However, the main part of the development on Site 1 will be on the eastern side of the site more than 150m (500 ft) from the nearest houses. | There are no houses within 500 ft of the site boundary. ***Positive Rating*** | 7 houses. ***Neutral Rating*** | 2 houses ***Positive Rating*** | ***Sites 2 & 4.*** |

*Table 2.10 Comparison of Sites (Social Aspects) - Cont*

| *Criteria* | *Site 1*<br>*Irish Ispat Land surrounding Hammond Lane.* | *Site 2*<br>*Irish Ispat – Reclaimed Land* | *Site 3*<br>*Site next to GlaxoSmithKline Entrance* | *Site 4*<br>*Site near to Pfizer LoughBeg* | *Best location with regard to set criteria.* |
|---|---|---|---|---|---|
| **Primary Wind Direction** | South Westerly – towards Spike Island. | South Westerly – towards Spike Island. | South Westerly – towards east end of Ringaskiddy village. | South Westerly – towards Spike Island. | - |
| **Potential Visual Impact** | Because of the topography between Ringaskiddy village and the site it is likely that only some parts of Ringaskiddy village will have a small view of the development..<br>The site will be very visible from the main road and will be partly visible from high ground in Cobh (1km away).<br>The stack may have some impact on the view of Martello Tower (on top of the hill).<br>This site will also be very visible from the harbour, however there are a number of other facilities located on the coastline. | This site has a direct line of site to Ringaskiddy village. It will be difficult to screen the development entirely unless the undeveloped land between Ringaskiddy village and the site is developed by other parties. | While the development would be very visible from the road and other view points it should be noted that there are two other existing facilities on the shores of LoughBeg.<br>This site will be visible from the harbour, however there are a number of other facilities located on the coastline. | As for Site 3. | *Sites 1, 3 & 4.* |

*Table 2.10 Comparison of Sites (Social Aspects) - Cont*

| *Criteria* | *Site 1*<br>*Irish Ispat Land surrounding Hammond Lane.* | *Site 2*<br>*Irish Ispat – Reclaimed Land* | *Site 3*<br>*Site next to GlaxoSmithKline Entrance* | *Site 4*<br>*Site near to Pfizer LoughBeg* | *Best location with regard to set criteria.* |
|---|---|---|---|---|---|
| *Amenity Areas* | Next to the Cork Harbour coastline where people walk and fish from the rocks. | Next to the Cork Harbour coastline where people walk and fish from the rocks. | Close to Currabinny Woods – a popular area for walks. | Close to Currabinny Woods – site would be visible from this area. | Currabinny Woods is a more popular destination for walkers so ***Sites 1 & 2*** may have slightly less impact on the surrounding amenities. |
| *Habitat Areas* | Monkstown Creek and LoughBeg are protected areas for wildlife.<br>Distance from sites:<br>LoughBeg: 650 m<br>Monkstown Creek: 1.6 km | Distance from sites:<br>LoughBeg: 1 km<br>Monkstown Creek: 2 km | Distance from sites:<br>LoughBeg: On the shoreline<br>Monkstown Creek: 2 km | Distance from sites:<br>LoughBeg: On the shoreline<br>Monkstown Creek: 2.1 km | ***Site 2.***<br>*It should be noted that GlaxoSmithKline and Pfizer LoughBeg both operate facilities on the shores of LoughBeg. GlaxoSmithKline also has a wildlife bird sanctuary as part of its site. This is monitored by the Irish Wildlife Conservancy (IWC).* |



***Note 1:*** One of the site screening issues discussed in the WHO guidelines is as follows:

A ***negative*** rating for the site if there are more than 15 dwelling units within 500 ft. (150m) of the proposed site boundary,

a ***neutral*** rating if there are 5-15 dwelling units within 500 ft. (150m), or

a ***positive*** rating if there are fewer than 5 units within the 500 ft. (150m)

### 2.6.8 Conclusions on the Four Sites

It should be stated that all four sites had advantages and disadvantages to them. No one site met all the set criteria.

Following the detailed investigation of the four sites it was considered that only two sites should be considered for possible acquisition. These were Sites 1 and 4.

Site 2 was discounted for the following main reasons:

- would be very visible from Ringaskiddy village
- is reclaimed land and has a history of on-site storage activities. There is therefore the potential for the land being contaminated and difficult to develop
- site was the smaller of the two Irish ISPAT owned sites.

Site 4 was discounted for the following main reasons:

- the logistical problems that would be encountered in getting permission from the various land owners to sell their land
- separate site access road is required
- access through IDA owned land may not be possible
- land may be difficult to develop
- part of site is within 500m of the Ringaskiddy school.



*Site 3*

Before Site 1 became available on the market, Indaver Ireland undertook a topographical survey of Site 3 to assess its suitability. Following agreement about its suitability an approach was made to the land owner regarding the possibility of purchasing the site. The land owner declined to make the site available for sale.

*Site 1*

Irish Ispat had been contacted as far back as January 2000 regarding the availability of this land. At that time they were not interested in selling. However, in the second half of that year they put both Sites 1 and 2 up for auction. Indaver Ireland undertook a site topographical survey of the site as well as a preliminary site investigation study to determine its suitability for the development.

Following these initial investigations Indaver Ireland made a bid for Site 1, which they eventually bought in December 2000.

The main issues that may be of concern to the local residents with regard to the chosen site are considered to be as follows:

- traffic through Ringaskiddy village
- closeness of residential areas
- visual impact
- atmospheric emissions
- proximity of schools (> 750 m)
- negative impact on house prices in the area.

All these issues and potential mitigation measures have been addressed in the relevant sections of this EIS.

## 2.7 Principal Design Objectives

The principal design objectives for the Ringaskiddy waste management facility can be summarised as:

- the facility should manage industrial hazardous and non hazardous waste and municipal solid waste with energy recovery
- the facility's capacity should be selected to ensure that the incentive to minimise waste is maintained
- the technology should be robust and adaptable to the small and changing Irish market
- safety and environmental protection to be given the highest priority
- the existing need should be addressed, in conformance with Irish Government and EU policy, in a sustainable manner
- the facility should meet all current and foreseeable future regulatory standards
- the facility's construction and operation should minimise resource consumption and wastes
- the facility should optimise existing site features and have the minimum impact on the neighbourhood
- a portion of the income from the facility should be used for community environmental projects.



## 2.8 Design Basis

The facility should consist of three elements:

- community recycling park
- waste transfer station
- waste to energy plant

***Community Recycling Park (Phase 1)***

- be available to the local community
- provide for recycling of a wide range of household materials.
- staff member present at all times when the park is open
- staff /security office
- facilitate increasing environmental and waste management awareness and education in the local community, and the Cork region in general
- operate Monday to Friday, during business hours, and Saturday mornings.

***Waste Transfer Station (Phase 1)***

- covered storage for 1800 drums at any one time
- separate sections for incoming drums, storage of drums and repacking
- bulk tanks capacity of $100m^3$
- drum washing facilities
- tanker loading facilities
- parking for 10 to 12 trucks
- containment for surface water and fire water run-off
- odour and vapour emission control for bulking up operations
- operate 5½ days per week, 52 weeks a year.

***Waste to Energy Plant (Phase 1 & 2)***

- two parallel furnace and flue gas cleaning lines
- two stacks in one shell
- capacity to treat 60,000 tonnes of solid hazardous and other industrial waste
- post combustion chamber with capacity for 40,000 tonnes of liquid wastes, including chlorinated solvents
- capacity to treat 100,000 tonnes of municipal solid waste
- flue gas cleaning systems to ensure emissions are below the EU emission limits
- generation of maximum amount of electricity consistent with optimum boiler management
- operations 24 hours per day, 7 days per week
- acceptance of waste 5½ days per week
- waste reception area enclosed and under negative pressure to prevent odour emissions
- bunker and solvent storage capacity to allow continuous 24 hour, 7 day operation
- ash handling and storage facilities
- weigh bridges for incoming and outgoing trucks
- waste sampling station and laboratory
- fire water storage and fire water retention pond
- collection of rain water for use in the process
- facilities for 50 to 60 staff
- meeting area for use by the Indaver waste education officer.



## 2.9 Design Constraints

***Site Utilisation***

The site is 12ha (30.5 acres) but the location of the Hammond Lane Metal Company premises divides the site into two distinct parts, one to the east and one to the west. The layout of the waste to energy plant is quite confined in the eastern part.

The topography of the site imposes other constraints, particularly on access to the upper portion, to the south and west of the Hammond Lane premises. However, the topography also presents the opportunity to utilise the difference in level to facilitate gravity feeding of waste into the bunker.

***Building Height***

As described in more detail in Chapter 5, Landscape and Visual Impact, to help to minimise the visual impact of the waste to energy building, the building height was reduced to the practical minimum.

## 2.10 References

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