

2, Glenville  
Monkstown,  
Co. Cork.

Waste Licensing,  
Environmental Protection Agency,  
P.O. Box 3000,  
Johnstown Castle Estate,  
Co. Wexford.

17<sup>th</sup> November, 2004.

RE: Waste Licence application 186-1 by Indaver Ireland

Dear Sir/Madam,

We, the Passage West/Glenbrook/Monkstown branch of CHASE (Cork Harbour Alliance for a Safe Environment), state our strong objection to the decision taken by the Environmental Protection Agency to grant a draft Waste Licence to Indaver (Ireland) Ltd. for a hazardous waste incinerator, a non-hazardous waste incinerator, a hazardous waste transfer station and associated facilities at Ringaskiddy, Co. Cork.

We note the functions of the Agency under the Environmental Protection Agency Act, 1992 and, in particular, its remit under Section 52(2)(b) of that Act which requires the Agency to have regard to “*the need for a high standard of environmental protection and the need to promote sustainable and environmentally sound development, processes or operations*”.

We do not consider the information submitted in support of the Waste Licence application for the proposed facility to demonstrate that this facility will not cause environmental pollution as defined under Section 4(2) of the Act.

Furthermore, we consider that the facility proposed is not Best Available Technology (BAT), particularly in the context of the proposed site at Ringaskiddy.

**Failure to demonstrate that the facility will not cause environmental pollution**

The Environmental Protection Agency invites all Waste Licence applicants to consider the potential environmental impacts of a development under the categories outlined in Section H of the Waste Licence application form. The failure of the proposed Indaver facility to demonstrate adequate pollution avoidance and mitigation is also considered under these categories.

Air

The Environmental Impact Statement (EIS) for the proposed facility included an air dispersion model, the purpose of which was to demonstrate potential impact of atmospheric emissions from the proposed facility. This air dispersion model was supported by a baseline air quality assessment.

1. The air dispersion models used by Indaver have been developed by the USEPA. These models, ISCST3 and AERMOD, are Gaussian plume based and, as such, the USEPA cautions that they are not suited to use in locations with severe topographical changes or locations subject to extreme atmospheric calm. Furthermore, they are not recommended for use in coastal locations<sup>17,18</sup>. The hills around the Cork Harbour rise to a height of over 100 m O.D. The Inner Harbour basin regularly experiences extreme calm, particularly on cold winter nights. The USEPA recommends alternative models more suited to situations such as Cork Harbour<sup>16,17</sup>. Although use of these models is more complicated than use of ISCST3 or AERMOD, they are freely available from the USEPA.
2. Meteorological data input to the air dispersion models was gathered at Cork Airport. However, meteorological conditions in the inner basin of the Lower Harbour are quite different from those at Cork Airport. In an attempt to justify use of the Cork Airport data, Indaver compared meteorological data gathered at Cork Airport with data gathered at Roches Point. It is quite clear to those familiar with the Harbour that meteorological conditions at Roches Point are frequently as unrepresentative of conditions in the enclosed environment of the Inner Harbour as are those at Cork Airport. The only way to obtain accurate information on the meteorological peculiarities of the Inner Harbour is to erect a weather station at the proposed site and to monitor it over the course of a year.
3. Although Cork Harbour frequently experiences conditions of atmospheric thermal inversion, the potential for dispersion of emitted pollutants during thermal inversions was not adequately considered by the Indaver air dispersion modelling study. Aware of the inadequacies of ISCST3 in analysing dispersion in extreme calms, Indaver used the more appropriate USEPA-derived SCREEN3 algorithm. However, meteorological data input to the model included Stability Classes A – F only. Stability Class G is also routinely calculated at Cork Airport, is a measure of those atmospheric conditions which are most stable and is therefore most representative of conditions of thermal inversion.
4. The maximum potential atmospheric discharge modelled by Indaver was for discharge equivalent to limits specified in Directive 2000/76/EC<sup>11</sup> on the incineration of waste. But, as Table 9.8, Part I of the Operating Licence Reference Document indicates, the real maximum potential atmospheric discharge from the proposed facility results from equipment malfunction and is far greater than discharges at the Directive 2000/76/EC limits. It is essential that the impact of accidental releases on the local environment be modelled as a maximum potential atmospheric discharge. While such releases may be for periods of short duration only, they may occur more regularly than would be anticipated. For example, a then state-of-the-art hazardous waste incinerator at Ellesmere Port constructed in the early 1990s and operated by a company well respected in the UK waste disposal industry experienced six malfunctions within the month of May 1992 alone. Each of these malfunctions led to exceedences in chemical releases to atmosphere<sup>1</sup>.
5. Air quality monitoring carried out by Indaver prior to the air dispersion modelling study indicated exceedences of nickel, arsenic and particulates in the local environment. These were discounted without explanation and were not taken account of in subsequent modelling. Although it is claimed that a major source of such pollutants in the Lower Harbour has since closed down, no further ambient air quality monitoring has been undertaken to date to confirm that this closure has been reflected in improved local air quality.

## Climate

Section 17 of the EIS accompanying Indaver's Waste Licence application included an assessment of the impact of its proposed Ringaskiddy facility on climate. We consider this assessment to be inadequate and incomplete.

1. Indaver's climate impact assessment relates entirely to a comparison of the impact of a continued policy of waste to landfill and exportation against the impact of diverting this waste to the proposed facility. This is an irrelevant comparison, as implementation of European waste policy and national government strategy for waste management will continue to divert waste from landfill. It would have been far more realistic and useful to analyse the following scenarios:
  - Compare greenhouse gas arisings from the proposed Indaver facility against greenhouse gas arisings after proper implementation of the national published waste management strategy. Note that this national waste management strategy includes minimisation of waste arisings, increased recycling to meet designated governmental targets and composting or digestion of organic wastes. In this regard, it is worth noting that the USEPA estimates that for a tonne of mixed recyclable material, energy from incineration saves only 0.20 tonnes of carbon emissions compared with landfill, whereas recycling saves 0.79 tonnes of carbon emissions<sup>15</sup>.
  - Compare greenhouse gas arisings from the Indaver facility in the proposed Ringaskiddy location against the potential greenhouse gas emissions if the plant were located either in the Midlands or closer to Dublin. Putting the plant in a more central location could eliminate much associated transport.

Note that when evaluating these scenarios, it is essential to take account of the impact of full implementation of Directive 1999/31/EC<sup>10</sup> which restricts the disposal of organic waste to landfill. It is also necessary to remember that ash arising from the proposed facility will require landfill disposal. If a landfill must be provided to take the ash from an incinerator, then at least some of the climate impact from the landfill must be apportioned to the incinerator.

2. It is proposed that this facility, claimed to include what is described as the "national hazardous waste incinerator", will be sited at the end of a cul-de-sac at the very south of Ireland. There are no rail links to the site, nor have any port facilities been proposed to serve the facility. Therefore all waste incoming to the facility will be transported by road. Yet Indaver's assessment of the climatic impact of the facility does not include for greenhouse gases produced by vehicles transporting waste to the proposed facility. This omission is against a background set by the *National Climate Change Strategy*<sup>3</sup>, which targets an increase in the operational efficiency of road haulage and specifically targets reduced empty running.

Although statistics indicate 62% of national hazardous waste arisings to be generated in Cork<sup>5</sup>, these statistics never note that most of the major hazardous waste generators in the Ringaskiddy area already have their own in-house waste disposal facilities. Of all hazardous waste generated in Co. Cork, some 66% is treated in-house. Not all of the 33% that is exported is destined for disposal. Nationally, 17% of all waste exported is sent for disposal. Extrapolating this figure to Ringaskiddy suggests that some 6,500 tonnes of hazardous waste arising annually in Ringaskiddy will require treatment in the proposed Indaver facility. Consequently, even if only 50% of the capacity of Phase 1 is used for hazardous waste, this suggests that 43,500 tonnes will be imported from outside Ringaskiddy.

- Neither energy resources expended on the solidification of ash nor resources spent on transport of ash and its export to point of disposal were included in the Indaver climate impact evaluation.
- Neither the production nor the transportation of any of the consumeables to be used in the proposed Indaver facility have been included in the climate impact assessment. These consumeables are as listed in Section 12 of the EIS and Section 3.12, Part 1 of the Operating Licence Reference Document. They include:
  - sand – to be delivered by truck
  - activated carbon and lime – to be delivered in bulk by truck
  - lignite coke – to be delivered in bags by truck
  - urea/ammonia solution – to be delivered by road tanker
  - lime or limestone – to be delivered by truck
  - sodium hydroxide – to be delivered by road tanker
  - cement/iron silicate – to be delivered by truck
  - diesel – to be delivered by road tanker
  - mains supply water – requirement for 116,500 m<sup>3</sup>.y<sup>-1</sup>
  - natural gas – requirement for 400,000 Nm<sup>3</sup>.y<sup>-1</sup>

### Cultural Heritage

The site of the proposed development is within the zone of archaeological potential of the Ringaskiddy Martello Tower, the largest of five Martello towers in Cork Harbour and a designated National Monument. The stack from the proposed facility will impact on views from the Martello Tower, while the facility buildings will impact severely on its view from the public road. The public right of way to this Martello Tower runs through the site of the proposed facility. The alternative route proposed by Indaver is along the eastern boundary of the site. However, this proposed alternative route is along the edge of a cliff which is subject to erosion. Furthermore, no permission has been obtained for either the obliteration or the alteration of this right of way. Such permission is required under planning legislation.

### Ecology

Cork Harbour is a wetland of international importance for the birds it supports and is designated as a Special Protection Area under Directive 79/409/EEC<sup>7</sup> on the conservation of wild birds. Overall, Cork Harbour regularly hosts over 20,000 waterfowl and contains internationally important numbers of black-tailed godwit and redshank, along with nationally important numbers of nineteen other species. Furthermore, it contains the largest dunlin and lapwing flocks in the country.

Lough Beg is situated on the southern side of the Ringaskiddy Martello Tower. Lough Beg is a proposed Natural Heritage Area and plays a part in supporting internationally important numbers of black-tailed godwit and redshank and nationally important flocks of nineteen other wading species. The area is regarded as being particularly important in offering a secure roosting site for flocks of all shorebirds when feeding areas on the mudflats are covered by the tide.

Monkstown Creek, less than two kilometres from the proposed Indaver site, is a tidal inlet composed of mudflats. Monkstown Creek is also a proposed Natural Heritage Area. Monkstown Creek acts as winter refuge to at least locally important numbers of waterfowl. Cormorant may reach nationally important numbers with the jetty supporting a cormorant roost of over 100 birds, in addition to a second roost in the woods. The area is of value because its mudflats provide an important feeding area for waterfowl.

The proposed Indaver site is situated merely 50 m from the shores of Cork Harbour. In the context of the valuable ecological status of the Harbour, it is extraordinary that the ecological assessment presented in Section 10 of the EIS should include merely a cursory examination of species present on the proposed site and an unproven dismissal of the impact of the facility on any habitats or species outside of the site boundary.

1. While most of the waders and other species of note visit Cork Harbour during the winter months, the only surveys undertaken on the Indaver site were during June. Furthermore, although the site is merely a stone's throw from the seashore and so close to designated bird sanctuaries, the survey did not look at any potential impacts of the Indaver proposals outside the site perimeter.
2. Insects were surveyed on the site during September, a time when even the EIS admits that "*many species of butterfly and moth have clearly ceased flying*" (Section 10, p. 9 of 22). The mammal survey conducted on five days during May and June identified badgers as conclusively breeding on site. However, although the badger is a species protected species by law, even the EIS acknowledges that "*May-June is not a good time to search for setts, particularly this year with the extensive recent growth, and there may be more setts on the site that were missed*" (Section 10, p. 5 of 22).
3. Although the adjacent Martello Tower is a likely roosting ground for bats, no attempt was made to undertake a bat survey. Note that the bat is also a species protected by legislation.
4. The ecological assessment took no account of the impact of emissions which fall on the water on oysters and other filter feeders currently commercially farmed in Cork Harbour.

It is essential that the effects of a facility such as that proposed by Indaver should be regularly monitored on the basis of comprehensive baseline data on biodiversity and on levels of key pollutants in the local environment. Indicator species for the monitoring programme should be selected according to the locality and nature of potential impacts.

### Human Beings

The proposed Indaver facility will be situated in the centre of the steep-sided Cork Harbour valley. The Cork County Development Plan 2003<sup>2</sup> plans for some 45,000 people to live on the slopes of this valley by 2011. The town of Cobh is approximately 2 km downwind of the proposed site. Cobh currently has a population of more than 10,000 and it is planned that this will increase to 12,000 by 2011. European Commission advice<sup>12</sup> is that it is "*important to avoid locating an incinerator upwind of residential areas [or] in enclosed air basins*". The internationally acclaimed, newly constructed National Maritime College is directly across the road from the site of the proposed hazardous waste transfer station. This college will accommodate 750 students and 75 staff. The entrance to the national Naval Base is directly across the road from the site of the proposed incinerators.

1. Protection of human beings in the event of a major accident has scarcely been talked about in any of the Indaver documentation. Yet this will be a Class II Seveso site which, depending on the quantities and types of materials accepted at the proposed transfer station, has the potential to be reclassified as a Class I Seveso site. A *Report on Hazard Identification and Evaluation for Major Accident Prevention* was undertaken by consultants on behalf of Indaver and submitted to the Health and Safety Authority for analysis. This report assumed worst case atmospheric dispersion to be Pasquill Stability Class F. This is not the case. Worst case atmospheric dispersion is Pasquill Stability

Class G. Even using Pasquill Stability Class F data, some of the consequence distances for major accident scenarios indicate that the National Maritime College could be affected by a major accident at the Indaver site. Even in Stability Class D atmospheric conditions, the report evaluates a vapour cloud explosion to have the potential to break the windows of the Naval College.

The only atmospheric releases from a major accident studied in the report was an emission of dioxin from a fire in the bunker serving the non-hazardous waste incinerator. No analysis of the potential releases of dioxin from a fire or explosion in the post-combustion chamber was attempted. Note that it is in the post-combustion chamber that the high-chlorine content wastes will be burned. The report made no assessment of potential impacts from accidental releases of any compounds other than dioxin.

The site of this proposed facility is at the end of a cul-de-sac, served by just one road. Should a major accident occur at the site when the wind is blowing from the east, there is no route by which firefighters can access the site. Equally, there is no escape route for students and teachers of the National Maritime College. Similarly, there is but one road on to Haulbowline Island, where the Naval Base has its headquarters. Should there be a major accident at the site, naval personnel may have no route of escape. If weather and tide conditions such as those experienced during the week of 25/10/2004 should prevail when a major accident takes place at the site, access would be hampered even further. Under these conditions, it would be impossible to evacuate the town of Cobh, as there is but one bridge at Belvelly serving the Great Island.

2. In 2003, the Health Research Board<sup>13</sup> published a comprehensive study analysing the health effects of incineration and landfill. In relation to incineration, this study notes that *“a number of well-designed studies have reported associations between developing certain cancers and living close to incinerator sites”*. It further urges for the urgent routine monitoring of the health of people living near waste sites. It comments on the *“serious deficiency of baseline environmental information in Ireland”* and calls for improved monitoring of all potential pollutants. The study concludes that *“further research, using reliable estimates of exposure, over long periods of time, is required to determine whether living near ... incinerators increases the risk of developing cancer”*.

Despite the strong evidence of a link between proximity to incinerators and health effects, none of the Indaver documentation included any attempt to assess the potential public health effects of its proposed facility. No assessment of risk to the 45,000 inhabitants who will live within a 5 km radius has ever been carried out. The only pollutant release mentioned in the EIS with a view to its impact on human health is dioxin. The only impact of this chemical mentioned in chloracne. However, chloracne is merely one of the human health effects of dioxin. Although dioxin is classified as a Class A carcinogen, it causes immune system and reproductive effects at body burdens some 100 times lower than those associated with cancer. One of its trans-generational non-cancer effects includes disruption of endocrine hormone systems, especially those related to sexual development of the foetus. Yet none of these health effects were mentioned in the Indaver documentation.

There are a myriad of other compounds to be released routinely from the stack of the incinerators which have significant health impacts. None of the health impacts of any of these compounds were mentioned in the EIS. But acute inhalation exposure to antimony causes irritation of the nose and mouth, abnormalities in the circulatory system and disruption of the respiratory tract. Arsenic is an established human carcinogen. Short-term exposure to high levels of inhaled cadmium causes respiratory effects, whereas long-term exposure can lead to emphysema, anaemia and cancer. Chromium VI is a known carcinogen causing lung cancer via inhalation. The toxic effects of cobalt include lung

irritation, immunological deficiency, heart disease, cancer and death. Mild exposure to lead causes tiredness, irritability, abdominal pain, anaemia, and behavioural changes in children. The effects of long-term exposure on child neurological development is well documented. Mercury and in particular methylmercury, also has neurological effects. Inhalation of all forms of nickel causes irritation, lesions and immunological responses, while some forms of nickel are carcinogenic. The toxicity of thallium extends to a degeneration of nerve fibres.

It is essential that a comprehensive risk assessment of the proposed facility on the health of human beings within the Cork Harbour valley and further afield be undertaken. It is further essential that this risk assessment be supported by a comprehensive baseline monitoring study which will serve as a basis for routine assessment of the health of Cork Harbour residents in line with the Health Research Board<sup>13</sup> recommendations.

3. It is also essential that Indaver addresses the potential health impact of workers within its proposed facility. According to the Health Research Board<sup>13</sup>, "*occupational exposures to hazardous emissions in waste workers are due to a combination of factors. Of primary importance is proximity to numerous hazardous constituents of waste. Exposures may result in an increased risk of illnesses such as respiratory, skin and gastrointestinal complaints. Evidence of exposures to, and cellular and genetic effects resulting from, certain chemicals such as trace metals, dioxins and other organic substances is strong.*" But the Indaver documentation does not even mention precautions to be undertaken to protect the health of its workers, let alone undertake any assessment of the potential health impact of working within the proposed facility. Workers within the Indaver facility are human beings and, as such, must be addressed through either the EIS or the Waste Licensing process.

### Hydrogeology

The eastern edge of the proposed site is merely 50 m from the sea. The surface water system of Cork Harbour and the groundwater systems of the proposed site are closely intertwined. There are saline influences on the groundwater within the proposed site and surface water from the site drains directly into the Lower Harbour. Overburden on the site is thin and less than 1 m in places. Therefore, not only is the site itself extremely vulnerable hydrogeologically, but its close hydrogeological interplay with the waters of Cork Harbour means that the placing of waste storage, handling and incinerative facilities on this site also places the waters of Cork Harbour at extreme risk.

Severe flooding was experienced in the Cork Harbour area during the week of 25/10/2004 when high tides, easterly winds and heavy rainfall combined. During this time, the site of the proposed incinerator was submerged under over one metre of water. Such a flooding event was scarcely considered possible by Indaver and was most certainly not designed for. The surface water drainage system would not have been adequately sized to divert the flood waters into the storm and surface water storage tanks. Even if it had been capable of doing so, the capacities of both the storm and surface water storage tanks could in no way accommodate the volume of flood water experienced on that site during this week. Had contaminated water been stored in either tank when the flood waters hit, contaminants would have been washed out into Cork Harbour. In this context, it is worth noting that the World Health Organisation<sup>19</sup> recommends that no site vulnerable to flooding should be considered to be suitable for establishment of a hazardous waste incinerator.

Indaver proposes to construct storage tanks underground to a depth of -5 m O.D. These tanks will therefore be at the level of the water table as detected at the time of site investigations. Any leak in these tanks will result in contaminants flowing through the groundwater system

directly into Cork Harbour. The close relationship between this groundwater system and Harbour waters means that it will be virtually impossible to either detect contamination of groundwater or to clean groundwater in the event of contamination before it reaches the sea.

### Noise

Although the noise impact of the construction phase is considered to be potentially significant (Section 8, p. 7 of 16), the EIS makes no estimate of the magnitude of noise emissions to the local environment during the construction phase. Yet prediction of the impact of noise arising during the construction phase is a compulsory component of an EIS<sup>8</sup>. It is particularly important in this case, partly because of the proximity of the proposed site to the National Maritime College, partly because of the sensitive habitats close to the proposed site and partly because of the sensitive species currently living on the proposed site. It is absolutely essential that the noise impact of the construction phase is strictly controlled by licence.

The EIS contains no assessment of noise from the facility when operational on either on-site or off-site habitats. The only assessment made of noise impacts on ecology relates entirely to the facility's construction phase. This is contrary to the requirements of Directive 85/337/EEC<sup>8</sup>.

### Discharge to Surface Water and Sewer

Because discharges to both municipal surface water and foul sewers serving Ringaskiddy are released untreated to Cork Harbour, there is little point in considering discharges to surface water and discharges to sewer separately. Although a new Lower Harbour wastewater treatment plant is currently being planned, Cork County Council envisages that this plant will not be operational until 2010 – 2015.

All documentation associated with the Indaver Waste Licence application gives the impression that there will be no surface water discharges from the facility. This is not the case. Although there may be no direct intentional discharges from the facility to surface water, a considerable volume of discharge to the Cork County Council surface water sewer is planned.

We consider the potential for pollution of Harbour waters from the proposed drainage system to be significant.

1. All hardstanding and yard areas both in the waste transfer station and in the waste to energy plants are to be discharged directly to surface water sewer. It is proposed that these discharges be continuously monitored for TOC and pH such that contamination may be detected. Should these continuous monitors malfunction in any way, either from equipment failure or lack of maintenance, potential contamination could be missed and spillages could pass directly into the municipal surface water sewer.

If contamination is detected in discharges from hardstanding or yard areas, the runoff will be directed to an underground storage tank in the case of the waste to energy plant and to an overground storage tank in the case of the waste transfer station. Here, it will again be tested. If found to be contaminated, Indaver documentation proposes that it will be taken “*off-site for treatment or disposal*”. There is a significant dearth of suitable facilities for the treatment or disposal of such contaminated liquid in County Cork. It seems highly likely that the natural tendency of any financially-conscious plant operator would be to

leave the contaminated runoff in the storage tanks until it becomes sufficiently diluted by rainwater to discharge as uncontaminated runoff into the surface water sewer.

2. The capacity of the water storage tanks is, at best, borderline. If the practice of storing contaminated runoff for dilution is employed, then storm and firewater storage capacity will be further reduced.

In weather and tide conditions such as those pertaining during the week of 25/10/2004, the proposed site was entirely flooded by natural causes. The depth of the water was such that the kerbed water storage area in the waste transfer station would have been submerged and rendered useless.

Had any contaminated water been stored in either the underground or overground storage tanks during the week of 25/10/2004, it would have been washed directly into either the surface water sewer or into the sea. Bearing in mind the Indaver assurance that “*flooding could only occur in the unlikely event of an extreme rainstorm occurring during a fire on the site. The risk of flooding is considered to be extremely low*” (Part I, para. 15.7), flood conditions such as these were obviously neither anticipated nor considered. However, they have now been proven to be a credible risk and, as such, must be designed for. Furthermore, should a fire have occurred during this flooding event, the site would have had plenty of firewater but absolutely no firewater storage.

3. The Indaver *Operating Licence Reference Document* suggests that, if found to be contaminated, the following discharges may require off-site treatment or disposal:
  - runoff from hardstandings in the waste to energy plant
  - runoff from hardstandings in the waste transfer station
  - runoff from tank bunds and bunded areas in the waste to energy plant
  - runoff from tanker unloading areas and direct injection hardstanding area in the waste to energy plant
  - runoff from tank farm bund and tanker loading area in the waste transfer station
  - effluent from drum washing in the waste transfer station
  - fire water.

A potential treatment or disposal outlet for such discharges must be specified, or the “dilute and discharge” option may become too attractive to overcome. Note that it will take over 60 tanker trips to empty all contaminated firewater from the waste to energy underground storage tank to an off-site disposal facility. The long-term consequences of dilute and discharge practices on Cork Harbour could be very serious.

4. Neither Indaver nor the Environmental Protection Agency proposes monitoring of Cork Harbour waters to ensure no deleterious impact arising from the proposed facility. Pollution of Cork Harbour could be caused either as described above, or by undetected contamination of saline groundwater under the site, or by deposition of atmospheric pollutants. The impacts on water pollution on the human food chain through the poisoning of aquatic species can be significant. In this regard, there has been no mention in any of the Indaver documentation of the highly successful oyster and mussel farming carried out in Rostellan Bay, in the Great Island Channel and on the Spit Bank of Cork Harbour. We consider it essential that background and routine monitoring of both Cork Harbour waters and filter feeder species bred in the Harbour should be undertaken at representative locations.

### **Facility is not Best Available Technology**

The site on which Indaver proposes to build this facility is extremely vulnerable environmentally.

- The site is situated at sea level in the centre of the Cork Harbour valley. It is surrounded on three sides by slopes of up to 100 m in height. Meteorological conditions within the valley are localised and complex. Because of its topography and its proximity to the sea, the area is prone to thermal inversions.
- The site is surrounded by the 35,000 inhabitants of eight towns and is 2 km directly upwind of the 10,000 inhabitants of the town of Cobh.
- The entrance to the waste transfer station is across the road from the National Maritime College, which houses 750 students and 75 staff. The entrance to the waste to energy plant is directly across from the only bridge onto Haulbowline Island, where the national Naval Base is situated.
- The site is prone to flooding.
- The eastern boundary of the site is merely 50 m from Cork Harbour. The eastern boundary itself is subject to coastal erosion.
- Such is its proximity to the sea that groundwater under the site shows evidence of saline intrusion.
- Municipal sewers serving the area discharge directly to sea without treatment.
- Cork Harbour is acclaimed as a wetland of international importance for the birds it supports and is designated as a Special Protection Area under Directive 79/409/EEC on the conservation of wild birds.
- The site is 1 km from one of several commercial beds in Cork Harbour for rearing filter-feeding shellfish.
- The site is situated at the end of a cul-de-sac with only one access road. In certain weather conditions, emergency services may be unable to access to the site should a major accident occur. Under these conditions, personnel at the National Maritime College and the Naval Base will also be unable to leave their premises by road.

The proposed Indaver facility is not a straightforward process facility. It is one to which inputs vary and one in which the characteristics of inputs are frequently unknown. Whilst having its merits within the world of incineration, the fluidised bed technology is particularly sensitive and requires a very homogenised input. To this end, the UK Environment Agency<sup>14</sup> considers fluidised beds to be unsuitable for disposal of hazardous waste. It further advises that *“at merchant incinerators [burning hazardous wastes], the variation in the types of waste and their high hazard and environmental pollution potential means that such processes must adopt the very highest technological and management standards, as must co-incineration processes burning similar hazardous wastes”*<sup>14</sup>.

Directive 1996/61/EC<sup>9</sup> on integrated pollution prevention and control provides comprehensive definition of the requirements of Best Available Technology (BAT). It specifically defines the concept of “best” as being *“most effective in achieving a high general level of protection of the environment as a whole”*.

The application of BAT is subjective rather than objective, but is intended to be guided by the above-mentioned definitions and by Annex IV of Directive 1996/61/EC<sup>9</sup>, which provides considerations to be taken into account when determining BAT. Directive 1996/61/EC<sup>9</sup> indicates that BAT is intended to be applied not merely in a general sense but also on a site specific basis.

Bearing in mind the nature of the process proposed, the requirements and advice of Directive 1996/61/EC<sup>9</sup> and the vulnerability of the proposed site and its environs, it can only be concluded that the proposed Indaver facility is not BAT for this site.

### Conclusion

Under Section 52(2)(a) of the Environmental Protection Agency Act, 1992, the Agency is obliged to “*keep itself informed of the policies and objectives of public authorities ...*”. While current government policy is supportive of thermal treatment, the proposed facility contravenes published national and local strategy for much that relates to environmental protection.

- The Environmental Protection Agency’s own published documentation<sup>6</sup> acknowledges that climate change is considered to be “*one of the most serious environmental issues of this century*”. It further describes climate stability as being “*fundamental to social stability and sustainable development*” and emphasises the urgency of the action that Ireland must take if it is to meet its obligations under the Kyoto Protocol target. The government’s *National Climate Change Strategy*<sup>3</sup> comments on the more severe flooding, rising sea levels and accelerated coastal erosion which Ireland may experience as a consequence of climate change. Yet by granting a draft Waste Licence to this proposal, the Environmental Protection Agency is approving the establishment of what purports to be a national facility at the end of a cul-de-sac in the very south of Ireland. There are no rail links to this site. All wastes and process inputs must be transported by road freight. All wastes leaving the site must also be transported by road freight. All non-incinerable wastes collected at the transfer station will be transported by road to the Indaver facility in Dublin for export. Although Ireland’s highest concentration of hazardous waste-generating industry may be in Cork Harbour, it is also the case the industries in Cork Harbour are generally run by large multinational corporations and are amongst the wealthiest industries in the country. Some two thirds of the industries in Cork Harbour treat their own waste in-house and only a fraction of that remaining for export is destined for disposal.

- Although the *National Hazardous Waste Management Plan*<sup>4</sup> recommends that “*a thermal treatment disposal facility for the management of hazardous waste currently exported for disposal is required if Ireland is to become self-sufficient in hazardous waste management*”, the cornerstone of the Plan is waste prevention. The proposed Indaver facility is a co-incineration facility which has twice the capacity recommended in the Plan. This will certainly not encourage waste prevention and may, in fact, encourage the establishment of hazardous waste generating industry. This is in direct contravention of the Plan’s recommended priorities: “*Industrial developments should be considered in terms of their environmental impacts and the development of industry with low hazardous waste generating potential should be a priority*”.
- The *National Hazardous Waste Management Plan*<sup>4</sup> also recommends that “*at least two engineered cells for the landfill disposal of hazardous waste should be developed*”. No such hazardous waste landfill has been developed in Ireland to date. Although hazardous waste landfill capacity is an essential supporting component of a thermal treatment facility such as that proposed by Indaver, a draft Waste Licence has nonetheless been granted to Indaver. But, to date, neither the Environmental Protection Agency nor Indaver has identified where the ash from the proposed Indaver facility will be transported to for disposal.
- The *Co. Cork Waste Management Plan*<sup>20</sup> does not include thermal treatment in the preferred scenario for waste management in Co. Cork. While the Plan acknowledges that it will conduct feasibility studies into the potential role incineration may play in the County, current stated Cork County Council policy separation of the wet and dry waste fractions at a mechanical separation plant with subsequent composting of the wet fraction and baling and landfill disposal of residuals.

The World Health Organisation<sup>19</sup>, which recognises and supports the role of incineration in waste management, clearly states that hazardous waste incineration facilities should not be established in areas subject to flooding, coastal erosion or thermal inversions. The European Commission<sup>12</sup>, which also supports the position of thermal treatment in the waste hierarchy, clearly states the importance of not locating incineration facilities either upwind of residential areas or in enclosed air-basins.

Not merely does the proposed Indaver site at Ringaskiddy contravene both World Health Organisation and European Commission advice, but the environmental assessment performed on the site is inadequate in the context of the requirements of Directive 85/337/EEC and does little to assure that the proposed facility will not cause environmental pollution.

Section 52(2)(b) of the Environmental Protection Agency Act, 1992, compels the Agency to “*have regard for a high standard of environmental protection and the need to promote sustainable and environmentally sound development, processes or operations*”. We cannot understand how, with such a remit as is granted to the Agency under this Act, a draft Waste Licence can be issued for the proposed Indaver facility at Ringaskiddy.

In view of the nature of the proposed facility and its consequent potential impact on the residents and environment of Cork Harbour, CHASE (Passage West/Glenbrook/Monkstown) requests the Environmental Protection Agency to provide an Oral Hearing in relation to this Waste Licence application.

Please find enclosed a cheque for the appropriate fee of €253.95.

Yours faithfully,

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Marcia K. D'Alton, B.E., M.Eng.Sc., M.I.E.I.

on behalf of Mary P. Bowen,  
CHASE (Passage West/Glenbrook/Monkstown)

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