INSPECTORS REPORT
WASTE LICENCE REGISTER NUMBER W040-1

(1) Summary:

Name of Applicant	Sorundon Ltd trading as Irish Environmental Services
Facility Name (s)	Irish Environmental Services
Facility Address	520 Beech Road, Western Industrial Estate, Naas Road, Dublin12
Description of Principal Activity	Hazardous Waste Transfer Station
Quantity of waste (tpa)	3,200
Environmental Impact Statement Required	No
Number of Submissions Received	**2**
INSPECTOR'S RECOMMENDATION	The proposed decision as submitted to the Board be approved.

Notices	Issue Date(s)	Reminder(s)	Response Date(s)
Article 14 (2) (b) (i)	Not Applicable		
Article 14 (2) (b) (ii)	20th July 1998 25th Feb. 1999	28th Sept. 1998	10th Sept.1998 7th Oct. 1998 22nd March 1999
Article 14 (2) (a)	7th April 1999		
Article 16	9th April 1999	27th May 1999	17th May 1999 26th May 1999 1st June 1999

Applicant Address	520 Beech Road, Western Industrial Estate, Naas Rd., Dublin 12
Is the facility an existing facility:	Yes
Prescribed date for application:	1st May 1998
Date Application received:	30/4/98
Confidential Information Submitted	No

FACILITY VISITS:

DATE	PURPOSE	PERSONNEL	OBSERVATIONS
24/6/98	Site notice and visit	MK	compliance see report
2/2/99	Site notice and visit	MK	compliance see report

(2) Class/Classes of Activity

The class(es) of activities for which the applicant has applied are marked below. The principal activity is indicated by (P), other activities by (X).

Waste Management Act, 1996			
THIRD SCHEDULE **Waste Disposal Activities**		**FOURTH SCHEDULE** **Waste Recovery Activities**	
1. Deposit on, in or under land (including landfill).		1. Solvent reclamation or regeneration.	
2. Land treatment, including biodegradation of liquid or sludge discards in soils.		2. Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).	
3. Deep injection of the soil, including injection of pumpable discards into wells, salt domes or naturally occurring repositories.		3. Recycling or reclamation of metals and metal compounds.	
4. Surface impoundment, including placement of liquid or sludge discards into pits, ponds or lagoons.		4. Recycling or reclamation of other inorganic materials.	
5. Specially engineered landfill, including placement into lined discrete cells which are capped and isolated from one another and the environment.		5. Regeneration of acids or bases.	
6. Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.		6. Recovery of components used for pollution abatement.	
7. Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule.	X	7. Recovery of components from catalysts.	
8. Incineration on land or at sea.		8. Oil re-refining or other re-uses of oil.	
9. Permanent storage, including emplacement of containers in a mine.		9. Use of any waste principally as a fuel or other means to generate energy.	
10. Release of waste into a water body (including a seabed insertion).		10. The treatment of any waste on land with a consequential benefit for an agricultural activity or ecological system,	
11. Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.		11. Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule.	
12. Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.		12. Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule.	
13. Storage prior to submission to any activity referred to in this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced.	P	13. Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced.	X

Class description:

WASTE MANAGEMENT ACT,1996: THIRD SCHEDULE [Note 1]	
Class 7	**Physico-chemical treatment not referred to elsewhere in this Schedule (including evaporation, drying and calcination) which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 10 of this Schedule:** This activity is limited to the treatment of clinical waste involving the sterilisation of waste by means of a Bondtech autoclave followed by shredding and compaction of the shredded material as described in the licence application.
Class 13	**Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste was produced:** This activity is limited to the provision of interim storage of hazardous and non-hazardous waste prior to transport for disposal or treatment on-site

Note 1: Any reference to a Class is to be taken as being a class in the Third Schedule of the Waste Management Act, 1996.

WASTE MANAGEMENT ACT,1996: FOURTH SCHEDULE [Note 2]	
Class 13.	**Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste was produced:** This activity is limited to the provision of interim storage of hazardous and non-hazardous waste prior to transport for recovery.

Note 2: Any reference to a Class is to be taken as being a class in the Fourth Schedule of the Waste Management Act, 1996

Activities recommended for licensing:

It is recommended that all the above activities, for which the applicant has applied for a waste licence, be licensed subject to the conditions of the proposed decision (PD).

(3) Facility Location

Appendix 1 contains a location drawing and a layout drawing showing the significant features of the facility.

The facility is located in the Western Industrial Estate adjacent to the Naas Road in Dublin 12. Sorundon Limited is trading as Irish Environmental Services. A hazardous

waste transfer station is operated at the facility and it is proposed to carry out Autoclave treatment of healthcare risk waste.

(4) Waste Types and Quantities

The total quantities and types of wastes accepted by the facility are shown below.

YEAR	NON-HAZARDOUS WASTE (tpa)	HAZARDOUS WASTE (tpa)	TOTAL QUANTITY OF WASTE (tpa)
1997	100	1,750	1,850
1998	190	1,950	2,140
1999 (estimated)	250	2,950	3,200

The expected maximum annual tonnage are indicated below.

Maximum Annual Tonnage (for the Transfer station and the Autoclave process)	3,200 (estimated)

(5) Activity Summary

It is proposed to carry out two operations at the facility. These operations can be divided into current and proposed. The current operation is the storage of waste (predominantly hazardous) in the transfer station prior to its subsequent removal off site for either disposal or recovery generally abroad. The proposed operation is the autoclave treatment of healthcare risk waste prior to its disposal to landfill. These two operations are described separately.

Transfer Station

The transfer station is used to store wastes prior to their subsequent removal off site for disposal or recovery generally abroad. The waste types, quantities, acceptance procedures and handling of the hazardous waste is controlled by *Condition 5* of the licence. Hazardous waste comes into the transfer station in sealed containers and does not undergo any treatment or bulking up process prior to being shipped off site for disposal or recovery abroad. The wastes are stored in properly bunded and segregated areas and are held until there is a complete load of compatible wastes for shipping. There is generally no emissions from this operation, however, there may be fugitive emissions if a accidental spillage or leakage occurs. This is covered under *Condition 7.3.2* and by the contingency arrangements in *Condition 10*.

Autoclave Process

The applicant proposes to install and operate an Autoclave plant to treat healthcare risk waste. The treatment process involves the manual loading of the healthcare risk waste containers into a lined steel carts which are then loaded into the autoclave by means of a forklift truck. The sterilisation process is initiated by reducing the pressure to 0.06 -0.16 bars. The pre-treatment vacuum removes residual air from the autoclave vessel and ensures thorough permeation of steam throughout the entire waste load. After completing the pre-treatment vacuum process the autoclave is pressurised with saturated steam to 4.34 bars. At this pressure the minimum operation temperature is 148^{o}C, for a minimum of 30 minutes to ensure inactivation of Bacillus stearothermophilus spores at a 6 $\log_{10}$ reduction or greater as required by *Condition 5.24.* Following pressurisation the steam is vented through a steam condenser and the condensate is drained to sewer. A post treatment vacuum is applied to the vessel prior to the end of the cycle to ensure that no steam remains in the vessel. This also reduces the moisture content of the waste.

The carts are subsequently unloaded by forklift truck and brought to the shredder. The shredder reduces the waste to a particle size of 8mm which is within the requirements of *Condition 5.24.1 (c).* The shredded waste is loaded directly into the compactor and compacted prior to landfill. There is concern that the treated waste is loaded into the shredder by forklift prior to the results of the batch testing being known. *Condition 5.19.4* requires a proposal for the handling of treated waste for the Agency's agreement prior to the operation of the Autoclave. This is in addition to information already received by the Agency. *Condition 5.35* requires that the licensee submit a report identifying options for the recovery of processed healthcare risk waste to the Agency for its agreement.

Each batch shall be tested in accordance with the requirements of *Condition 5.25* and shall be held at the facility in fully enclosed containers until such time as test results from the daily analysis carried out under *Schedule F.3* confirm its successful treatment.

(6) Facility Design

- **Infrastructure;**

The facility comprises an enclosed warehouse which has been partitioned into different sections. The hazardous waste transfer station area is bunded and has designated storage areas where the different (flammable, toxic, corrosive) waste categories are separated from each other by intermediate bunding. The designated Healthcare Risk Waste Treatment Area is separated from the hazardous waste storage area and also will have designated areas for the healthcare risk waste as per *Condition 5.21.*

(7) Facility Operation/Management

- **Waste Acceptance Procedures**

Waste shall only be stored in designated areas and all containers shall be uniquely marked and traceable.

Transfer Station

Conditions 5.8 and 5.11 outlines the type and quantity of wastes that shall be accepted at the facility. No waste in the transfer station shall have a retention time on site in excess of three months as outlined by *Condition 5.6*. All waste containers shall be labelled as per *Condition 5.4 and 5.12* and in designated bunded areas where appropriate arrangements are made for the storage of incompatible substances.

Autoclave Process

Only the type and quantity of healthcare waste outlined in *Conditions 5.17* shall be accepted at the facility. All healthcare waste will be collected at the generator's premises in sealed containers as required by *Condition 5.5 and 5.19*. Containers will be properly tagged to allow for tracing of same. The licensee is responsible for ensuring that no unacceptable waste is placed into the autoclave unit.

- **Waste Handling**

Transfer Station

All wastes entering the transfer station shall be handled in accordance with *Condition 5.9* and any unsuitable and /or wastes in contravention with the licence shall be handled appropriately and removed off site for disposal or recovery.

Autoclave Process

In addition to the procedures submitted by the applicant as part of Attachment E.1 and E.2 (22 March and 17 May 1999), *Condition 5.19.4* requires that proposals for a procedure for the handling of untreated and treated waste to be submitted, prior to the operation of Autoclave, to the Agency for its agreement.

- **Nuisance Control**

The transfer station part of the facility receives waste in enclosed drums and thus vermin or litter nuisance is not a problem.

A possible source of odours may be the Autoclave treatment plant, however, *Condition 6.3* ensures that odours will not result in a significant impairment or interference beyond the facility boundary.

- **Hours of Operation**

The facility will operate from 7.00 to 19.00 Monday to Saturday as per *Condition 5.2* of the PD.

(8) Decommissioning and Aftercare

Condition 8 of the PD deals with the decommissioning of the facility.

All waste in the transfer station will be removed for disposal or recovery to appropriate alternative facility.

The healthcare waste shall also be removed and the treatment plant and building shall be fumigated using ozone followed by a through cleaning and wash with disinfectant.

The applicant is required to make appropriate financial provisions are required under *Condition 11*.

(9) Hydrogeology

The facility is a fully contained site with bunded areas which are required to be inspected in accordance with *Condition 4.8*. The waste accepted at the facility is required to be held in sealed containers therefore the risk to groundwater is reduced. The fuel storage area is also bunded and is controlled by *Condition 4.7*. However, *Condition 9.7* requires the applicant to submit proposals to investigate the extent, if any, of groundwater contamination at the facility in the absence of any on site monitoring of groundwater. It also requires installation of monitoring boreholes and the ongoing monitoring to verify that pollution does not occur in the future.

(10) Emissions to Air

Transfer Station

The transfer station has no emission to air as there is no processing of waste on site and the waste is stored in sealed containers. However, Condition 7.3.2 requires proposals for the assessment of fugitive emissions from the facility.

Autoclave Process

It is expected that there will be no significant air emissions from the Autoclave process as there is a post treatment vacuum. This removes the air and mixes it with steam at 150 ^{o}C which is then condensed and drained to sewer. The applicant has indicated that there will not be any air emissions from the Healthcare Risk Waste Treatment Area. However, it is expected that there will be some minor emissions from the Autoclave. A contingency measure has been included in *Condition 7.3.3* which requires air monitoring be carried out during the commissioning phase. In the event that air emissions are identified then the appropriate abatement measures agreed in advance with the Agency will be such that the emission limit values set out in *Schedule G* will

be met. These emission limit values represent BATNEEC and are those prescribed for a similar licensed activity. The detailed design will be submitted to the Agency for agreement prior the commissioning of the Autoclave.

(11) Noise Emissions

The applicant states that the noise levels emanating from the noise sources at the facility are very low. However, no noise survey has been carried out. Due to the fact that the facility is located within an industrial estate and adjacent to a dual carriageway no noise limits have been set. *Condition 7.6* requires that the activities shall be carried out such that noise does not result in significant impairment of, or significant interference with, amenities or the environment beyond the facility boundary. Also *Condition 9.1* requires that a noise survey shall be carried out annual basis at a location to be agreed with the Agency.

(12) Emissions to Sewer

Discharges to sewer are approximately 20m^3/day. This waste water is derived from the condensation of process steam from the Autoclave. Consent to discharge has been obtained from South Dublin County Council as per *Condition 7.7*. Monitoring requirements and emission limits are set out in *Schedules F and G* respectively.

(13) Emissions to Surface Water

None.

(14) Other Significant Environmental Impacts of the Development

None

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

No relevant water quality management plan exists. The Dublin region is currently developing a plan. Regard has been made to the regional Waste Plan which has been adopted by South Dublin County Council.

(16) Submissions/Complaints

Appendix 2 contains a list of all submissions received relating to the application. The dates received and the details of the individual, department, group or organisation making the submission are provided.

A summary of all issues raised in these submissions received and how these issues have been dealt with in the proposed decision are as follows;

16.1 Summary of submissions

Submission 1 : Mr.Basil Whyte made a submission on behalf of South Dublin County Council dated 21/10/1998

The following are the points made and our response to them:

1. *The submission concerned two principal issues-*
    a) They suggested that the following statement relating to the fuel storage in the south western corner of the site be included.

    "The bund shall be checked weekly for structural soundness and cracking/damage by fork trucks. Any defects will be notified to the competent authority."

    Response This has been included in *Condition 4.7.1* of the PD.

    b) They requested that the following be added to the list of Health and Safety equipment carried by the drivers.

    "Cyanide Antidote Kit - for transport of Cyanide contaminated waste only."

    Response This is a health and safety matter and is not conditioned within the PD. **It will however be forwarded to the applicant for its consideration as part of on site health and safety matters.**

Submission 2: Submission by email from Mr. Gerry Walker dated 27/4/1999

The following are the points made and our response to them:

1. The submission contains one issue in relation to the waste licence application.
    a) The submission is concerned that "flammable materials/ asbestos/clinical waste/corrosives are held all around the open yard where access is easy and housekeeping is very poor."

    Response The storage of all wastes accepted into the facility shall be in designated and, where appropriate, secure storage areas as defined in *Condition 5.3.* Also, *Condition 5.16* deals with the storage and handling of asbestos waste, similarly, *Condition 5.19 and 5.21* controls the handling and storage of healthcare waste and requires that it shall

only be stored in designated areas within the enclosed Healthcare Risk Waste Treatment Area.
Condition 4.3 requires that the site be secure and the fence locked when the facility is unsupervised. The applicant has a security firm employed to carry out random inspection of the facility outside normal operation hours.

Signed: _____ Dated: _____

Ms Margaret Keegan

APPENDIX 1

1. LOCATION DRAWING

2. LAYOUT DRAWING

APPENDIX 2

SUBMISSIONS