Oxigen

Attachment E

Emissions

E.1 Emissions to Atmosphere

E.2 Emissions to Surface Water

E.3 Emissions to Sewer

E.4 Emissions to Groundwater

E.5 Noise Emissions

E.6 Environmental Nuisances

TABLE E.1(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N^{o}:	D1
Source of Emission:	Dust generated from on-site traffic movement
Location :	At southeast of facility inside perimeter fence adjacent to inner estate road
Grid Ref. (12 digit, 6E,6N):	309700E; 230622N
Vent Details Diameter: Height above Ground(m):	Not applicable
Date of commencement:	August 2006

Characteristics of Emission :

(i) Volume to be emitted:			
Average/day	75.25 mg/m^2/d *	Maximum/day	350 mg/m^{2}d
Maximum rate/hour	m^3/h	Min efflux velocity	m.sec^{-1}
(ii) Other factors			
Temperature	^{o}C(max)	^{o}C(min)	^{o}C(avg)
For Combustion Sources: Not applicable Volume terms expressed as : ☐ wet. ☐ dry. _____%O_2			

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

*** Explanatory Note: Average/day is the figure that was calculated and submitted in 2009 PRTR Returns**

TABLE E.1(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N°:	D2
Source of Emission:	Dust generated from on-site traffic movement
Location :	At west of facility, separating the Facility from Turnpike Road
Grid Ref. (12 digit, 6E,6N):	309384E; 230567N
Vent Details Diameter: Height above Ground(m):	Not applicable
Date of commencement:	August 2006

Characteristics of Emission :

(i) Volume to be emitted:			
Average/day	141.4 mg/m²/d	Maximum/day	350 mg/m²d
Maximum rate/hour	m^3/h	Min efflux velocity	$m.sec^{-1}$
(ii) Other factors			
Temperature	°C(max)	°C(min)	°C(avg)
For Combustion Sources: ~~Not applicable~~ Volume terms expressed as : ☐ wet. ☐ dry. _____ $\%O_2$			

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

*** Explanatory Note: Average/day is the figure that was calculated and submitted in 2009 PRTR Returns**

TABLE E.1(ii) MAIN EMISSIONS TO ATMOSPHERE (1 Page for each emission point)

Emission Point Ref. N^{o}:	D3
Source of Emission:	Dust generated from on-site traffic movement
Location :	In north boundary of facility on fence separating facility form industrial estate road
Grid Ref. (12 digit, 6E,6N):	309495E; 230759N
Vent Details Diameter: Height above Ground(m):	Not applicable
Date of commencement:	August 2006

Characteristics of Emission :

(i) Volume to be emitted:			
Average/day	71.4 mg/m^{2}d	Maximum/day	350 mg/m^{2}d
Maximum rate/hour	n/a m^3/h	Min efflux velocity	n/a m.sec^{-1}
(ii) Other factors			
Temperature	^{o}C(max)	^{o}C(min)	^{o}C(avg)
For Combustion Sources: Not applicable Volume terms expressed as : ☐ wet. ☐ dry. _____%O_2			

(iii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

*** Explanatory Note: Average/day is the figure that was calculated and submitted in 2009 PRTR Returns**

TABLE E.1(iii): MAIN EMISSIONS TO ATMOSPHERE - Chemical characteristics of the emission (1 table per emission point)

Emission Point Reference Number: _____

Parameter	Prior to treatment[1]				Brief description of treatment	As discharged[1]					
	mg/Nm^3		kg/h			mg/Nm^3		kg/h.		kg/year	
	Avg	Max	Avg	Max		Avg	Max	Avg	Max	Avg	Max

1. Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0^{o}C,101.3kPa). Wet/dry should be the same as given in Table E.1(ii) unless clearly stated otherwise.

TABLE E.1(iv): EMISSIONS TO ATMOSPHERE - Minor /Fugitive

Emission point Reference Numbers	Description	Emission details[1]				Abatement system employed
		material	mg/Nm$^{3(2)}$	kg/h.	kg/year	

1 The maximum emission should be stated for each material emitted, the concentration should be based on the maximum 30 minute mean.
2 Concentrations should be based on Normal conditions of temperature and pressure, (i.e. 0°C101.3kPa). Wet/dry should be clearly stated. Include reference oxygen conditions for combustion sources.

TABLE E.2(i): EMISSIONS TO SURFACE WATERS

(One page for each emission)

Emission Point:

Emission Point Ref. N^{o}:	SW-1
Source of Emission:	Rainwater run-off form facility yard
Location :	At north eastern point of site
Grid Ref. (10 digit, 5E,5N):	309601E; 230747N
Name of receiving waters:	River Carmac
Flow rate in receiving waters:	Not measured $m^3.sec^{-1}$ Dry Weather Flow Not Measured $m^3.sec^{-1}$ 95%ile flow
Available waste assimilative capacity:	Not measured kg/day

Emission Details:

(i) Volume to be emitted			
Normal/day	Not measured m^3	Maximum/day	Not specified m^3

Maximum rate/hour	Not measured m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

TABLE E.2(ii): EMISSIONS TO SURFACE WATERS - Characteristics of the emission (1 table per emission point)

Emission point reference number : ***SW-1***

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
BOD							0.72*	264.41*	
COD							3.74*	1364.11*	
Suspended Solids							5.02*	1832.84*	
Ammonia (as N)							0.02*	10.58*	
Mineral Oils							<0	0*	

*** Explanatory Note: Average/day is the figure that was calculated and submitted in 2009 PRTR Returns**

TABLE E.3(i): EMISSIONS TO SEWER (One page for each emission)

Emission Point:

Emission Point Ref. N^{o}:	SE-1
Location of connection to sewer :	
Grid Ref. (10 digit, 5E,5N):	309630E; 230718N
Name of sewage undertaker:	South Dublin County Council

Emission Details:

(i) Volume to be emitted			
Normal/day	0.2m^3	Maximum/day	15m^3
Maximum rate/hour	5m^3		

(ii) Period or periods during which emissions are made, or are to be made, including daily or seasonal variations (*start-up /shutdown to be included):*

Periods of Emission (avg)	_____min/hr _____hr/day _____day/yr

TABLE E.3(ii): EMISSIONS TO SEWER - Characteristics of the emission (1 table per emission point)

Emission point reference number : ***SE-1***

Parameter	Prior to treatment				As discharged				% Efficiency
	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	Max. hourly average (mg/l)	Max. daily average (mg/l)	kg/day	kg/year	
BOD							1.88*	687.97*	
COD							5.66*	2066.95*	
Suspended Solids							1.50*	547.39*	
Sulphates (as SO_4)							0.51*	184.62*	
Oils, fats and greases							0.19*	70.35*	
Mineral oils							<0	0*	
Detergents							<0	0.95*	
Zinc							<0	0.03*	
Copper							<0	0.14*	

*** Explanatory Note: Average/day is the figure that was calculated and submitted in 2009 PRTR Returns**

E.4 EMISSIONS TO GROUNDWATER

Directive 80/68/EEC, on the protection of groundwater against pollution caused by certain dangerous substances, prohibits the direct or indirect discharge into groundwater of List I substances and limits discharges of List II substances so as to avoid pollution. Measures are in place so that contaminated water from the site will not reach the groundwater supply at any point. The yard area is covered in hardstand and contaminated water is directed straight to the foul water drainage system via an oil interceptor. The only discharges to surface water from this site comprise of storm water from hardstanding, roofed and paved areas. There are 3 Class 1 full retention interceptors on the surface water line before the exit pipe.

The water from inside the sheds, the truck wash, sweeper bay and mechanic's area is all diverted to foul water drains. There are two by pass interceptors on site; they are located at the truck wash bay and at the sweeper bay. The bypass separators are a critical part of the pollution prevention program on site. They are designed to prevent watercourse pollution by containing oil and other hydrocarbons that have entered the draining system.

It is not considered that the activities at this facility will at any stage give rise to groundwater pollution.

E.5 NOISE EMISSIONS

Talking into account the location of the site within a large industrial area, it is not considered that the activities from the facility will give rise to any additional noise emissions. A noise monitoring programme was undertaken by BHP Ltd., on behalf of Oxigen Environmental Ltd. in June 2009, which indicated that the main source of noise generated at the noise sensitive location was from continues traffic from the Turnpike Road. A copy of this report is included as an attachment in Section F of this application.

Under Section 106 of the EPA Act of 1992, Oxigen Environmental Ltd. must take reasonable steps to prevent or limit any noise from their activities that may lead to a significant cause of nuisance. All processing of waste occurs indoors to minimise noise. All machinery/ processing plants are maintained in good condition and regularly greased to prevent vibration noise. It is considered that any noise emissions form the facility will be negligible.

E.6 ENVIRONMENTAL NUISANCES

E.6.1 BIRD CONTROL

As part of the operation of the site, all waste accepted at the facility will be processed under cover. Waste will not be left exposed outside of the processing shed and as such no 'food' sources will be readily available to attract birds to the facility. No exposed waste will be left outside of the processing shed over night as per EMS Procedure 'OXEP 11 Bird Control Procedure'.

E.6.2 DUST CONTROL

The site is designed to minimise the potential for dust generation during site operations. In accordance with EMS Procedure 'OXEP09 Dust Monitoring Procedure', the waste delivery vehicles will generally be free from debris that could generate dust, as all incoming waste shall be held within enclosed waste vehicles or at a minimum completely covered (skip waste). All areas accesses by vehicles is constructed of concrete.

Internal yard areas of the site are routinely swept and kept free of debris. If required the yard area will be dampened down during periods of dry weather. Other additional dust control measures are not required.

E.6.3 FIRE CONTROL

The following measures will be implemented to deal with any fires at the facility: -

- There are three fire hydrants currently located on-site which are supplied from the mains water supply.
- Fire extinguishers will be strategically located on-site.
- A fire alarm will be installed in all buildings within the facility.
- All Oxigen Environmental Ltd. trucks and/or plant equipment entering or operating on- site will carry fire extinguishers.
- Training of employees in fire prevention and control.
- Prominent posting of emergency response contact numbers (fire. gardai, ambulance and other agencies).
- No smoking signs will be displayed in all relevant (namely areas of high risk) on site.
- All waste stored at the facility will be stored within the recycling building or stored in covered/sealed containers.
- Firewalls will be constructed within all processing buildings on site.

Oxigen Environmental Ltd. will comply with all fire control conditions, which may be set by the fire authorities.

E.6.4 LITTER CONTROL

The control measures in place at Oxigen Environmental Ltd. to prevent the escape of lifter from the facility.

- All waste accepted at the facility shall be transported in contained lorries or in covered skips.
- Waste handling operations on the site ensure that waste is not left in the open air uncovered and as such the potential for litter escape is minimal. All recycling and tipping operations are conducted within the recycling plant and all compacted waste is continuously stored within sealed containers and all temporary stored skips outside the plant are covered.
- A daily litter patrol of the site perimeter and access road is undertaken. Where the escape of litter has occurred it is immediately collected and returned to the site.

E.6.6 VERMIN CONTROL

Pest control measures that will be undertaken at the facility will consist of setting of poison by an independent specialist pest control company, throughout the site. Fly nuisance will be minimised by the rapid removal of degradable waste off-site, the washing of the floor within the buildings with disinfectant and the covering of all compacted waste and ensuring all skips are kept empty.

E.6.5 TRAFIC CONTROL

All movements on-and off the site will be controlled by the site manager/weighbridge operator and in accordance with the Traffic Management Plan for the Facility.

There is sufficient space at the entrance of the site to accommodate approximately 3 delivery vehicles at any one time. This will ensure that there will be no queuing on the public roads due to the proposed development. The dual weighbridge system that will be employed at the facility allows vehicles to enter and exit the facility simultaneously and therefore will reduce the waiting time at the weighbridge.

The existing road network is of good design and state of repair and has sufficient capacity. The road has been listed in the draft Development Plan for South Dublin County Council to be upgraded. Traffic management at the site is satisfactory; the previous volumes of site traffic that serviced this site presented no problems.

The projected traffic volumes are relatively low, particularly when compared to existing flows in the vicinity of the site and are not expected to give rise to any problems in the area.

E.6.7 ROAD CLEANSING

The entire site will be/is comprised of hardstand and will be routinely cleaned. Therefore the potential for the generation of mud is eliminated. During the routine inspections for litter, an inspection of the access road and the facility will be inspected for mud deposition, especially during periods of wet weather. Any mud will be removed through the washing of the area. Any waste material collected from the road sweepers will be treated on site, with the liquid fraction being discharged to sewer.