

Rilta Environmental Ltd.

RILTA
Environmental
Limited



Annual Environmental Report (AER),
Site 402, Greenogue Business Park.

January 1st – December 31st 2014

March 2015

TOBIN CONSULTING ENGINEERS



TOBIN
Patrick J. Tobin & Co. Ltd.

REPORT:

Annual Environmental Report

PROJECT:

**Rilta Environmental Ltd.
Site 402 – Environmental Monitoring**

CLIENT:

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1 INTRODUCTION

The Environmental Protection Agency (EPA) issued Rilta Environmental Ltd. (RILTA) with Waste Licence Reg. No. W0192-03 for its site at Block 402, Greenogue Business Park, Rathcoole, County Dublin on 22nd July 2010. The facility is located within an industrial estate approximately 2km east of Newcastle village and approximately 2.5km west of Rathcoole village. The facility has been in operation since 2004. RILTA retained TOBIN Consulting Engineers (TOBIN) to prepare the Annual Environmental Report (AER) for the reporting period January to December 2014. This report has been prepared in accordance with Condition 11.10 and Schedule E of the waste licence.

This report addresses Condition 11.10 of the waste licence for the facility which states:

'The licensee shall submit to the Agency by the 31st March of each year an AER covering the previous calendar year. This report which shall be to the satisfaction of the Agency shall include as a minimum the information specified in Schedule E: Annual Environmental Report, of this licence and shall be prepared in accordance with any relevant guidelines issued by the Agency.'

The format of the report follows guidelines set in the "Guidance Note for Annual Environmental Report" issued by the Environmental Protection Agency. Account is also taken of the AER Draft Guidance Document and AER Information Templates issued by the Agency in January 2013.

1.1 WASTE ACTIVITIES AND RECORDS

The RILTA facility is a fully engineered and contained industrial site. It is licensed to accept 111,000 tonnes of waste material per annum, as set out in Schedule A of the waste licence. Table 1.1 below summarises the tonnes of waste RILTA is licensed to accept and compares it to waste tonnages accepted in 2014.

Table 1.1 Waste Acceptance Tonnages as per Waste Licence 192-03

Waste Type		Maximum (Tonnes Per Annum) Note 3	2014 Tonnages
Non-Hazardous Wastes Note 1,2	Commercial Waste	500	0
	Construction & Demolition Waste	500	3,074
	Industrial Sludges	1,000	133
	Other Industrial Waste	3,000	48,104
Non Hazardous Waste Total		5000	51,311
Hazardous Wastes EWC Code 13 05 03* 16 07 08* 16 10 01* 17 05 03* 17 06 01* 17 06 05*	<i>Description *</i>		
	Interceptor sludges	10,000	1,047
	Waste containing oil	2,000	753
	Aqueous liquid waste containing dangerous substances	1,500	3,595
	Soil and stones containing dangerous substances	60,000	5,326
	Insulation materials and construction materials containing asbestos.	8,000	6,196
	<i>Other</i> ^{Note 4}	24,400	25,559
	Hazardous Waste Total	106,000	42,476
Total		111,000	93,787

Note 1: Any proposals to accept other compatible non-hazardous waste types must be agreed in advance with the Agency.

Note 2: Excluding putrescible waste.

Note 3: The limitations on individual hazardous and non-hazardous waste types may be varied with the agreement of the Agency subject to the **total annual waste quantity remaining the same.**

Note 4: Hazardous waste types as detailed in Attachment H.1 of the review application for this licence Reg No: 192-03 or may be otherwise agreed in advance with the Agency.

Waste activities at the facility are restricted to those outlined in *Part 1 – Schedule of Activities Licensed*.

Licensed Waste Disposal Activities, in accordance with the 3rd Schedule of the Waste Management Act, 1996 to 2010:

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 (including evaporation, drying and calcination);

Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule;

- Class 12:** Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule; and
- 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 concerned is produced.

Licensed Waste Disposal Activities, 4th Schedule of the Waste Management Acts 1996 to 2010:

- Class 2:** Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological transformation processes);
- Class 3:** Recycling or reclamation of metals and metal compounds;
- Class 4:** Recycling or reclamation of other inorganic materials;
- Class 6:** Recovery of components used for pollution abatement;
- Class 8:** Oil re-refining or other re-uses of oil; and
- 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 is produced.

2 EMISSIONS FROM THE FACILITY

Schedule C of Waste Licence 192-03 requires RILTA to carry out noise, air, dust, surface water, groundwater and wastewater emissions monitoring. The locations of these monitoring points are shown on Drawing 4709-1107, attached in Appendix A.

Monthly, quarterly and annual monitoring was carried out during the period 1st January to 31st December 2014. All monitoring results and reports have been submitted to the Agency as required by Condition 11 and Schedule C of the waste licence. The following is a summary of the results and findings from the 2014 monitoring period.

2.1 GROUNDWATER EMISSIONS

Groundwater monitoring was conducted on a quarterly basis at 3 No. groundwater monitoring locations (BH1, BH2 & BH3) as set out Drawing 4709-1107 (see Appendix A). Results for all 4 No. quarterly monitoring events were furnished to the Agency as part of the environmental monitoring reports sent in April, July, October 2014 and January 2015.

2.1.1 Groundwater Monitoring at Borehole 1 (BH1)

The following is a summary of the values recorded for each parameter at BH1.

pH: The pH of groundwater analysed from BH1 ranged from 7.25 to 7.65 during 2014. Results from all monitoring events had values within the normal pH range ($6.5 \geq \text{pH} \leq 9.5$) set out in the EPA Interim Guideline Values¹ ('EPA IGV Limit') and reflects the natural background condition of the groundwater.

Conductivity: The conductivity concentrations in BH1 ranged from 517 $\mu\text{S}/\text{cm}$ to 764 $\mu\text{S}/\text{cm}$ during 2014. Results from all monitoring events were within the normal electrical conductivity range and were considerably lower than the EPA IGV Limit (1000 $\mu\text{S}/\text{cm}$) and the Groundwater Threshold Value ('TV') from *European Communities Environmental Objectives (Groundwater) Regulations, 2010 - S.I. No. 9 2010*, (1875 $\mu\text{S}/\text{cm}$) reflecting normal background groundwater concentrations.

Heavy metals: Concentrations of mercury in BH1 were below the laboratory limit of detection ('LOD') during the Q3 monitoring event and below the EPA IGV Limit (1 $\mu\text{g}/\text{l}$) and TV (0.75 $\mu\text{g}/\text{l}$) during the Q1, Q2 & Q4 monitoring events. Concentrations of arsenic in BH1 recorded during Q1, Q2, Q3 & Q4 were all well below the EPA IGV (10 $\mu\text{g}/\text{l}$) and TV (7.5 $\mu\text{g}/\text{l}$)

Boron, cadmium, chromium, copper, iron, lead, nickel and zinc were all analysed as part of the annual groundwater suite of parameters for BH1 during Q3 2014. All concentrations of these heavy metals at BH1 were below the EPA IGV Limit.

Inorganics: The following inorganic parameters were analysed as part of the annual groundwater suite of parameters for BH1 during Q3 2014 - total alkalinity, calcium, chloride, cyanide, magnesium, manganese, potassium, sodium and sulphate. These parameters all had results below the EPA IGV Limit, with the exception of chloride (43.58 mg/l), which exceeded the EPA IGV (30 mg/l). These results are consistent with previous results recorded at the site.

Pesticide: No concentrations of pesticides were detected during any monitoring event at BH1 during 2014.

List I/II Organic Substances, Mineral Oil, BTEX: Concentrations of list 1/11 organic substances (VOCs & SVOCs), mineral oil and BTEX were below the laboratory LOD² during all groundwater monitoring events at BH1 during 2014, with the following 2 No. exceptions:

- VOC (Chloroform) Q2 2014 1.967 $\mu\text{g}/\text{l}$
- Mineral Oil Q3 2014 47.25 $\mu\text{g}/\text{l}$ EPA IGV Limit = 10 mg/l

¹ From the EPA Interim Report – 'TOWARDS SETTING GUIDELINE VALUES FOR THE PROTECTION OF GROUNDWATER IN IRELAND'

² TPG CWG - Limit of Detection

2.1.2 Groundwater Monitoring at Borehole 2 (BH2)

The following is a summary of the values recorded for each parameter at BH2.

pH: The pH of groundwater analysed from BH2 ranged from 8.96 to 9.54 during 2014. Results from Q2, Q3 & Q4 monitoring events had values within the normal pH range ($6.5 \geq \text{pH} \leq 9.5$) set out by the EPA IGVLimit. The pH value at BH2 was elevated relative to the EPA IGVLimits ($6.5 \geq \text{pH} \leq 9.5$) during monitoring events Q1 (9.54). Slight fluctuations in the pH at BH2 are not atypical but will continue to be monitored closely.

Conductivity: The conductivity concentrations in BH2 ranged from $124\mu\text{S}/\text{cm}$ to $235\mu\text{S}/\text{cm}$ during 2014. Results from all monitoring events were within the normal electrical conductivity range and were considerably lower than the EPA IGVLimit ($1000\mu\text{S}/\text{cm}$) and the Groundwater Threshold Value ('TV') from *European Communities Environmental Objectives (Groundwater) Regulations, 2010 - S.I. No. 9 2010* ($1875\mu\text{S}/\text{cm}$) reflecting normal background groundwater concentrations.

Heavy metals: Concentrations of mercury in BH2 were below the LOD during the Q1 & Q3 monitoring events and below the EPA IGVLimit ($1\mu\text{g}/\text{l}$) and TV ($0.75\mu\text{g}/\text{l}$) during the Q2 monitoring event. The concentration of mercury in BH2 during the Q4 monitoring event ($1.05\mu\text{g}/\text{l}$) slightly exceeded the EPA IGVLimit and the TV.

Concentrations of arsenic in BH2 were below the EPA IGVLimit ($10\mu\text{g}/\text{l}$) and TV ($7.5\mu\text{g}/\text{l}$) during the Q1, Q2 & Q3 monitoring events. The concentration of arsenic in BH2 during the Q4 monitoring event ($10.06\mu\text{g}/\text{l}$) slightly exceeded the EPA IGVLimit and the TV.

Boron, cadmium, chromium, copper, iron, lead, nickel and zinc were all analysed as part of the annual groundwater suite of parameters for BH2 during Q3 2014. All concentrations of these heavy metals at BH2 were below their associated EPA IGVLimit, with the exception of Nickel ($24.62\mu\text{g}/\text{l}$), which slightly exceeded the EPA IGVLimit ($20\mu\text{g}/\text{l}$).

Inorganics: The following inorganic parameters were analysed as part of the annual groundwater suite of parameters for BH2 during Q3 2014 - total alkalinity, calcium, chloride, cyanide, magnesium, manganese, potassium, sodium and sulphate. These parameters all had results below their associated EPA IGVLimit, with the exception of chloride ($30.03\text{mg}/\text{l}$), which slightly exceeded the EPA IGVLimit ($30\text{mg}/\text{l}$) and potassium ($6.14\text{mg}/\text{l}$), which slightly exceeded the EPA IGVLimit ($5\text{mg}/\text{l}$).

Pesticide: No concentrations of pesticides were detected during any monitoring event at BH2 during 2014.

List I/II Organic Substances, Mineral Oil, BTEX: Concentrations of list 1/11 organic substances (VOCs & SVOCs), mineral oil and BTEX were below the laboratory LOD³ during all groundwater monitoring events at BH2 during 2014, with the exception of VOC (Chloroform) during Q2 (7.183µg/l).

2.1.3 Groundwater Monitoring at Borehole 3 (BH3)

The following is a summary of the values recorded for each parameter at BH3.

pH: The pH of groundwater analysed from BH3 ranged from 8.53 to 9.63 during 2014. Results from Q2 & Q3 monitoring events had values within the normal pH range ($6.5 \geq \text{pH} \leq 9.5$) set out by the EPA IGV Limit. The pH value at BH3 was elevated relative to the EPA IGV Limits ($6.5 \geq \text{pH} \leq 9.5$) during monitoring events Q1 (9.51) & Q4 (9.63). Slight fluctuations in the pH at BH3 are not atypical but will continue to be monitored closely.

Conductivity: The conductivity concentrations in BH3 ranged from 181µS/cm to 414µS/cm during 2014. Results from all monitoring events were within the normal electrical conductivity range and were considerably lower than the EPA IGV Limit (1000 µS/cm) and the Groundwater Threshold Value ('TV') from *European Communities Environmental Objectives (Groundwater) Regulations, 2010 - S.I. No. 9 2010* (1875 µS/cm) reflecting normal background groundwater concentrations.

Heavy metals: Concentrations of mercury in BH3 were below the LOD during the Q2 & Q4 monitoring events and below the EPA IGV Limit (1µg/l) and TV (0.75µg/l) during the Q1 & Q3 monitoring events.

Concentrations of arsenic in BH3 were below the EPA IGV Limit (10µg/l) and TV (7.5µg/l) during the Q2 monitoring event. The concentration of arsenic in BH3 during the Q1 monitoring event (8.58µg/l) slightly exceeded the TV, but was below the EPA IGV Limit. The concentration of arsenic in BH3 during the Q3 & Q4 monitoring events (11.52µg/l & 19.63µg/l respectively) slightly exceeded the EPA IGV Limit and the TV.

Boron, cadmium, chromium, copper, iron, lead, nickel and zinc were all analysed as part of the annual groundwater suite of parameters for BH3 during Q3 2014. All concentrations of these heavy metals at BH3 were below their associated EPA IGV Limit.

Inorganics: The following inorganic parameters were analysed as part of the annual groundwater suite of parameters for BH3 during Q3 2014 - total alkalinity, calcium, chloride, cyanide, magnesium, manganese, potassium, sodium and sulphate. These parameters all had results below their associated EPA IGV Limit, with the exception of chloride (55.04mg/l), which slightly exceeded the EPA IGV Limit (30mg/l) and potassium (6.91mg/l), which slightly exceeded the EPA IGV Limit (5mg/l).

Pesticide: No concentrations of pesticides were detected during any monitoring event at BH3 during 2014.

³ TPG CWG - Limit of Detection

List I/II Organic Substances, Mineral Oil, BTEX: Concentrations of list 1/11 organic substances (VOCs & SVOCs), mineral oil and BTEX were below the laboratory LOD⁴ during all groundwater monitoring events at BH3 during 2014, with the following 2 No. exceptions:

- VOC (Chloroform) Q2 2014 3.65µg/l
- VOC (Chloroform) Q4 2014 3.987µg/l
- Benzene Q2 2014 2.066µg/l (EPA IGV Limit = 1µg/l / TV = 0.75µg/l)
- Benzene Q4 2014 2.453µg/l (EPA IGV Limit = 1µg/l / TV = 0.75µg/l)

2.2 SURFACE WATER EMISSIONS

Surface water monitoring was conducted on a quarterly basis at 3 no. surface water monitoring locations, as set out Drawing 4709-1107 (see Appendix A). Results for all 4 No. quarterly monitoring events were furnished to the Agency as part of the environmental monitoring reports sent in April, July, October 2014 and January 2015.

2.2.1 Surface Water Monitoring

Results from all surface water monitoring locations indicate that surface water quality at the RILTA facility is within normal chemical range and is consistent with natural uncontaminated surface waters. The following is a summary of parameter concentrations at all surface water monitoring locations.

⁴ TPG CWG - Limit of Detection

pH: pH results from 2014 are summarised on Figure 2.1 and Table 2.1 below. The pH values at all surface water monitoring locations were within the normal range in 2014 (6.5 - 9.5), as set out in the European Union (Drinking Water) Regulations 2014 (SI 122) and reflect the natural conditions of this surface water feature.

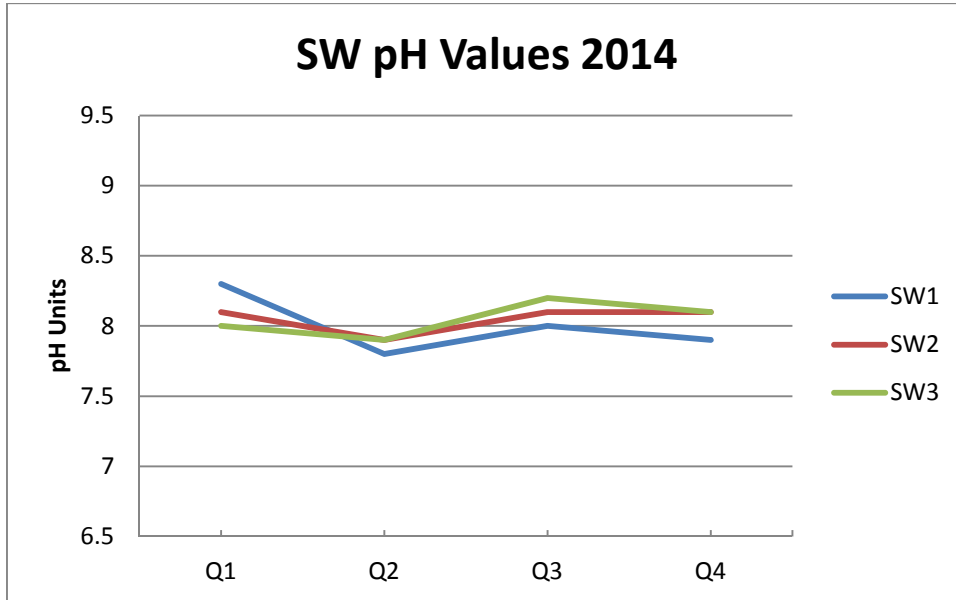


Figure 2.1 Surface Water pH Results - 2014

Table 2.1 Surface Water pH Results – 2014

Location	pH Quarter 1	pH Quarter 2	pH Quarter 3	pH Quarter 4
SW1	8.3	7.8	8.0	7.9
SW2	8.1	7.9	8.1	8.1
SW3	8.0	7.9	8.2	8.1

Chemical Oxygen Demand: Chemical Oxygen Demand (COD) results from 2014 are summarised on Figure 2.2 and Table 2.2 below. COD results at all monitoring locations was consistent with historic monitoring results from the site. Concentrations were slightly elevated at SW3 in Q1 with a peak concentrations of 26mg/l. There is no limit for surface water COD set out in waste licence 192-03.

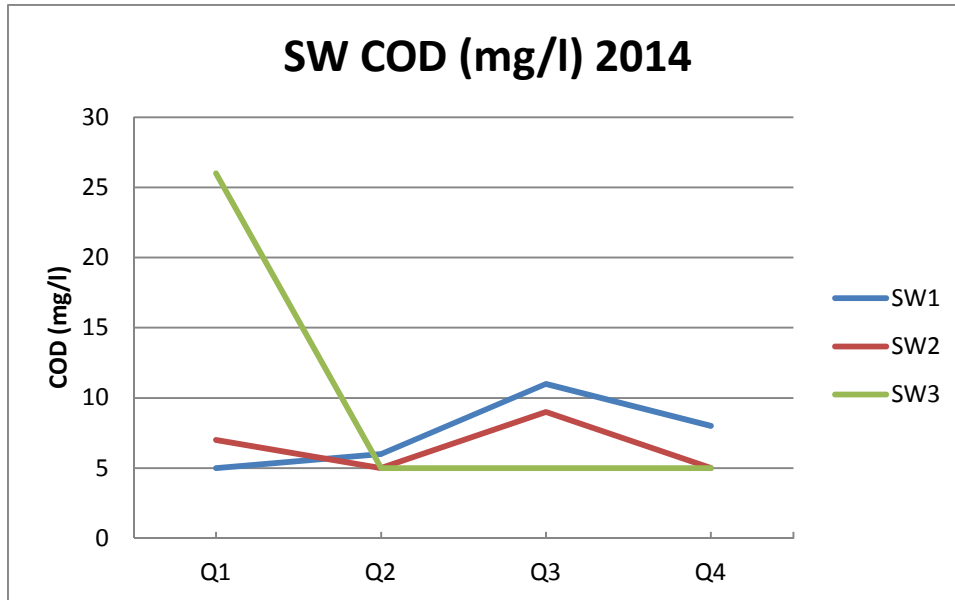


Figure 2.2 Surface Water COD Results - 2014

Table 2.2 Surface Water COD Results – 2014

Location	COD (mg/l) Quarter 1	COD (mg/l) Quarter 2	COD (mg/l) Quarter 3	COD (mg/l) Quarter 4
SW1	<5	6	11	8
SW2	7	<5	9	<5
SW3	26	<5	<5	<5

Total Suspended Solids: Total Suspended Solids (TSS) results from 2014 are summarised on Figure 2.3 and Table 2.3 below. The concentrations of TSS at all surface water monitoring locations were below the limit levels set out in waste licence 192-03 (35mg/l) for all monitoring events during 2014.

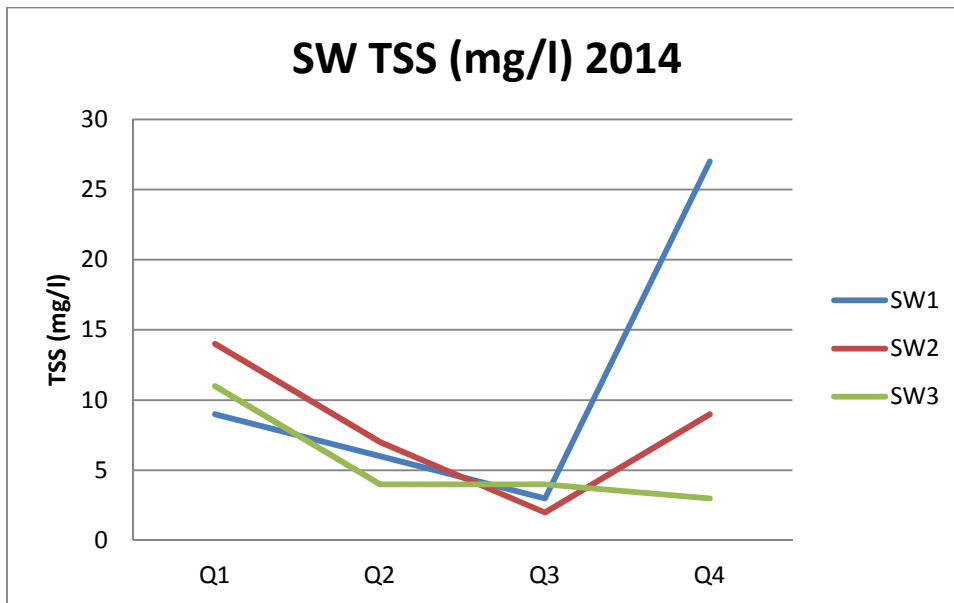


Figure 2.3 Surface Water Total Suspended Solids Results – 2014

Table 2.3 Surface Water Total Suspended Solids Results – 2014

Location	TSS (mg/l) Quarter 1	TSS (mg/l) Quarter 2	TSS (mg/l) Quarter 3	TSS (mg/l) Quarter 4
SW1	9	6	3	27
SW2	14	7	2	9
SW3	11	4	4	3

Mineral Oils: Mineral Oil results from 2014 are summarised on Figure 2.4 and Table 2.4 below. Concentrations of Mineral Oil were below the laboratory detection limit (<2.5µg/l) and the limit level set out in waste licence 192-03 (<5,000µg/l) for all monitoring events during 2014. Mineral Oil at SW1 in Q3 2014 was untypically high for the site (276.82µg/l), although it was still below the waste licence limit set for the discharge location SW3 (5,000µg/l). Monitoring point SW1 is located along the eastern boundary of the facility and is upstream of potential impacts from the facility. It may be possible that contamination of the sample occurred during sampling.

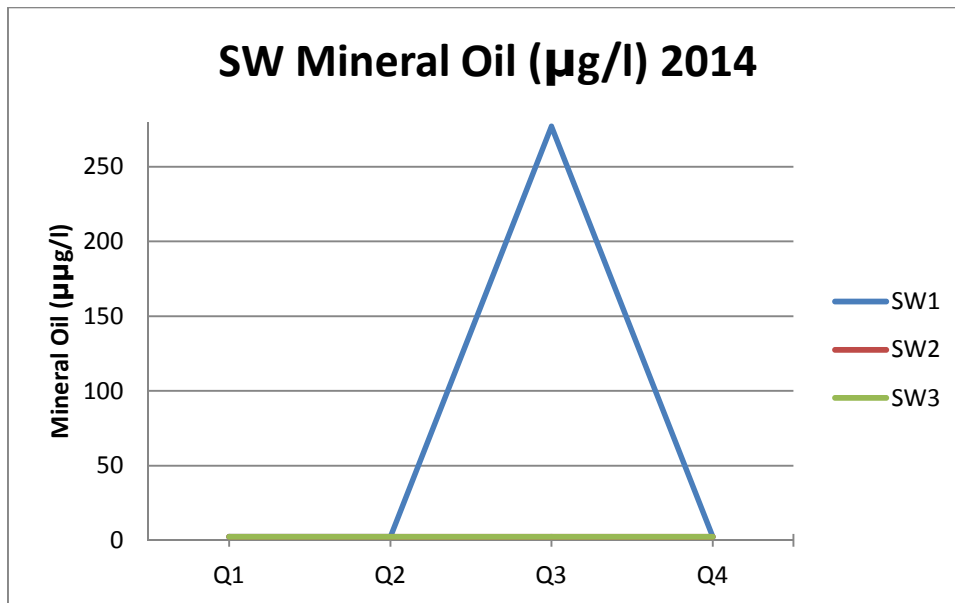


Figure 2.4 Surface Water Mineral Oil Results – 2014

Table 2.4 Surface Water Mineral Oil (mg/l) Results – 2014

Location	Mineral Oil (µg/l) Quarter 1	Mineral Oil (µg/l) Quarter 2	Mineral Oil (µg/l) Quarter 3	Mineral Oil (µg/l) Quarter 4
SW1	<2.5	<2.5	276.82	<2.5
SW2	<2.5	<2.5	<2.5	<2.5
SW3	< 2.5	< 2.5	< 2.5	< 2.5

2.3 WASTEWATER EMISSIONS

Waste water monitoring was conducted on a monthly basis at 1 no. monitoring location (SE-1), as per Schedule C of the waste licence 192-03 and illustrated on Drawing 4709-1107 (see Appendix A). The results for all 12 no. monitoring events were furnished to the Agency as part of the quarterly environmental monitoring reports sent to the Agency in April, July and October 2014, and January 2015.

Until the 12th of March 2014, grab sampling had been the only method utilised in obtaining a wastewater sample at the facility and results were compared and contrasted to the Emission Limit value for Grab Samples (mg/l), as per the waste licence (W0192-03). On the 12th of March 2014, a composite sampler was installed at the Rilta facility.

Following the installation of the composite sampler, depending on the parameter, samples are to be obtained for chemical analysis by either grab or composite sampling methods and be compared to the appropriate Emission Limit Value (Grab or Daily Mean Loading) as per Schedule C.3.2 of the waste licence.

The results of analysis in Q1 to Q4 2014 are compared to both the grab sample Emission Limit Value and the Daily Mean Loading (kg/day) Emission Limit Value, as represented in Table 2.1 and 2.2 below.

2.3.1 Wastewater Monitoring

The daily maximum volume of waste water emitted is 175m³ and the hourly maximum is 20m³. The total wastewater volume emitted during 2014 was 57,503m³ (57 503 000 litres).

The concentration of pH was within the required licence limit ($6.5 \geq \text{pH} \leq 10$) during all monitoring events in 2014. A summary of the reported monthly pH concentrations is contained in Table 2.5, Table 2.6 and Figure 2.5 below.

The concentration of mineral oil at SE-1 was below the required licence limit during all monitoring events in 2014. A summary of the reported monthly mineral oil concentrations is contained in Table 2.5 and illustrated in Figure 2.6 below.

With the exception of COD in August, concentrations of BOD, COD sulphate, zinc, copper, chromium, lead, nickel, arsenic, suspended solids and ammoniacal nitrogen⁵ were all below respective Daily Mean Loading Emission Limit Value during 2014. The reported monthly concentrations for these parameters are compared to the Daily Mean Loading Emission Limit Value in Table 2.6 and illustrated in Figure 2.7 below.

Concentrations of, surfactants, benzene, toluene, ethyl-benzene and total xylene and mineral oil were all below respective Grab Sample Emission Limit Value during 2014. A summary of the reported monthly wastewater concentrations for these parameters is contained in Table 2.5 and illustrated in Figure 2.8 below.

⁵ Ammonical nitrogen was added to the SE-1 monthly parameters in 2010, as part of licence 192-03.

Table 2.5 Results of Wastewater Analysis Represented as mg/l and Compared to Grab Sample Emission Limit Value

Parameter	Units	Limits*	2014											
			Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Temperature***	C	-	15.1	15.1	13.1	10.2	6.4	15.3	10.2	10.2	15.3	11.1	13.2	9.1
pH	pH units	6>pH<10	7.8	7.7	7.6	7.4	7.7	7.5	7.2	7.9	7.6	8	7.6	7.8
BOD	mg/l	2000	73	21	<2	47	49	11	2	170	3	90	180	310
COD	mg/l	4000	1395	586	253	1024	1935	200	17	2795	162	1402	1430	1170
Sulphate SO ₄	mg/l	1000	4.81	90.51	54.46	152.37	30.4	27.31	26.36	386.94	47.76	22.41	29.34	78.53
Surfactants**	mg/l	100	0.756	0.141	0.192	0.496	0.717	0.085	0.079	0.76	0.75	0.3598	0.5208	1.1716
Zinc Zn	µg/l	3000	50.52	71.93	47.55	102	143.2	186.6	265.9	64.22	113	52.61	83.36	9.03
Copper Cu	µg/l	1000	97.59	47.35	93.7	57.18	60.9	76.77	89.44	72.52	38.36	40.6	31	8.758
Chromium	µg/l	1000	132.5	54.32	30.08	93.37	225.8	27.32	16.63	627.9	25.01	158.9	0.783	5.227
Lead	µg/l	200	47.88	<0.12	1.25	9.69	31.92	3.69	3.94	7.12	26.34	9.433	5.135	0.34
Nickel	µg/l	1000	70.58	26.13	19.72	62.93	173.1	14.78	13.39	344.4	47.05	66.49	56.5	3.914
Arsenic	µg/l	500	46.27	18.77	13.07	29.92	79.42	213.6	8.11	257.3	4.99	73.52	79.6	5.022
Benzene**	µg/l	1000	<0.47	<0.47	<0.47	0.47	3.102	0.47	0.47	3.95	0.47	1.879	1.584	1.193
Toluene**	µg/l	1000	14.536	<0.54	<0.54	0.54	11.83	0.54	0.54	38.12	8.56	32.412	12.498	9.209
Ethylbenzene**	µg/l	1000	<0.45	<0.45	<0.45	0.45	0.847	0.45	0.45	13.92	1.99	9.4333	7.524	3.671
Total Xylene**	µg/l	1000	14.81	<1.18	<1.18	12.13	17.28	1.18	1.18	40.14	14.98	70.2	35.383	12.3
Suspended Solids	mg/l	500	16	18	4	11	25	15	2	42	28	31	31	13
Ammonical Nitrogen	mg/l	-	717.83	284.52	141.93	556.76	893.94	78.6	87.45	510.23	136.5	505.65	528.31	366.1
Mineral Oil**	µg/l	10000	<2.5	<2.5	13.36	2.5	2.5	124.6	59.58	2.5	87.35	746.48	2.5	2.5

**Collected via Grab Sampling from Q4 2014 onward, as per W0192-03 all other parameters collected via composite sampler

***Sample is stored on site in refrigerator.

Table 2.6 Results of Wastewater Analysis Represented as Kg/day and Compared to Daily Mean Loading Emission Limit Value

Parameter	Units	Limits*	2014											
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Daily Flow Rate	m ³	Max 180m3	*	*	*	175m	105m	175m	175m	175m	175m	175	175	175
Temperature***	C	-	*	*	*	10.20	6.40	10.20	10.20	10.20	15.30	11.10	13.20	9.10
pH	pH units	6>pH<10	*	*	*	7.40	7.70	7.40	7.40	7.40	7.50	8.00	7.60	7.80
BOD	kg/day	144	*	*	*	8.23	5.15	1.93	0.35	29.75	0.53	15.75	31.50	54.25
COD	kg/day	288	*	*	*	179.20	203.18	35.00	2.98	489.13	28.35	245.35	250.25	204.75
Sulphate SO ₄	kg/day	180	*	*	*	26.66	3.19	4.78	4.61	67.71	8.36	3.92	5.13	13.74
Surfactants	kg/day	18	*	*	*	0.09	0.08	0.01	0.01	0.13	0.13	0.06	0.09	0.21
Zinc Zn	kg/day	0.54	*	*	*	0.02	0.02	0.03	0.05	0.01	0.02	0.01	0.01	0.00
Copper Cu	kg/day	0.18	*	*	*	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.00
Chromium	kg/day	0.18	*	*	*	0.02	0.02	0.00	0.00	0.11	0.00	0.03	0.00	0.00
Lead	kg/day	0.04	*	*	*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nickel	kg/day	0.18	*	*	*	0.01	0.02	0.00	0.00	0.06	0.01	0.01	0.01	0.00
Arsenic	kg/day	0.09	*	*	*	0.01	0.01	0.04	0.00	0.05	0.00	0.01	0.01	0.00
Benzene	kg/day	0.18	*	*	*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Toluene	kg/day	0.18	*	*	*	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00
Ethylbenzene	kg/day	0.18	*	*	*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Xylene	kg/day	0.18	*	*	*	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.00
Suspended Solids	kg/day	72	*	*	*	1.93	2.63	2.63	0.35	7.35	4.90	5.43	5.43	2.28
Ammonical Nitrogen	kg/day	*	*	*	*	97.43	93.86	13.76	15.30	89.29	23.89	88.49	92.45	64.07
Mineral Oil	kg/day	1.8	*	*	*	0.00	0.00	0.02	0.01	0.00	0.02	0.13	0.00	0.00

***Sample is stored on site in refrigerator.

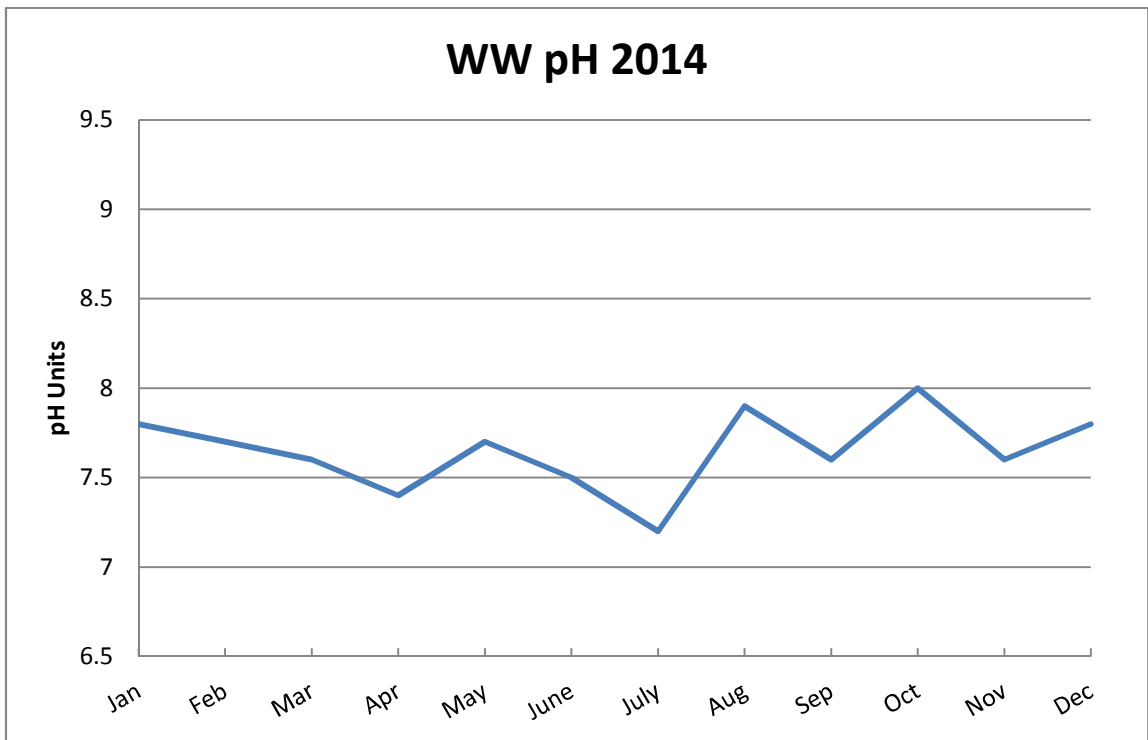


Figure 2.5 Wastewater – pH Trend Data 2014

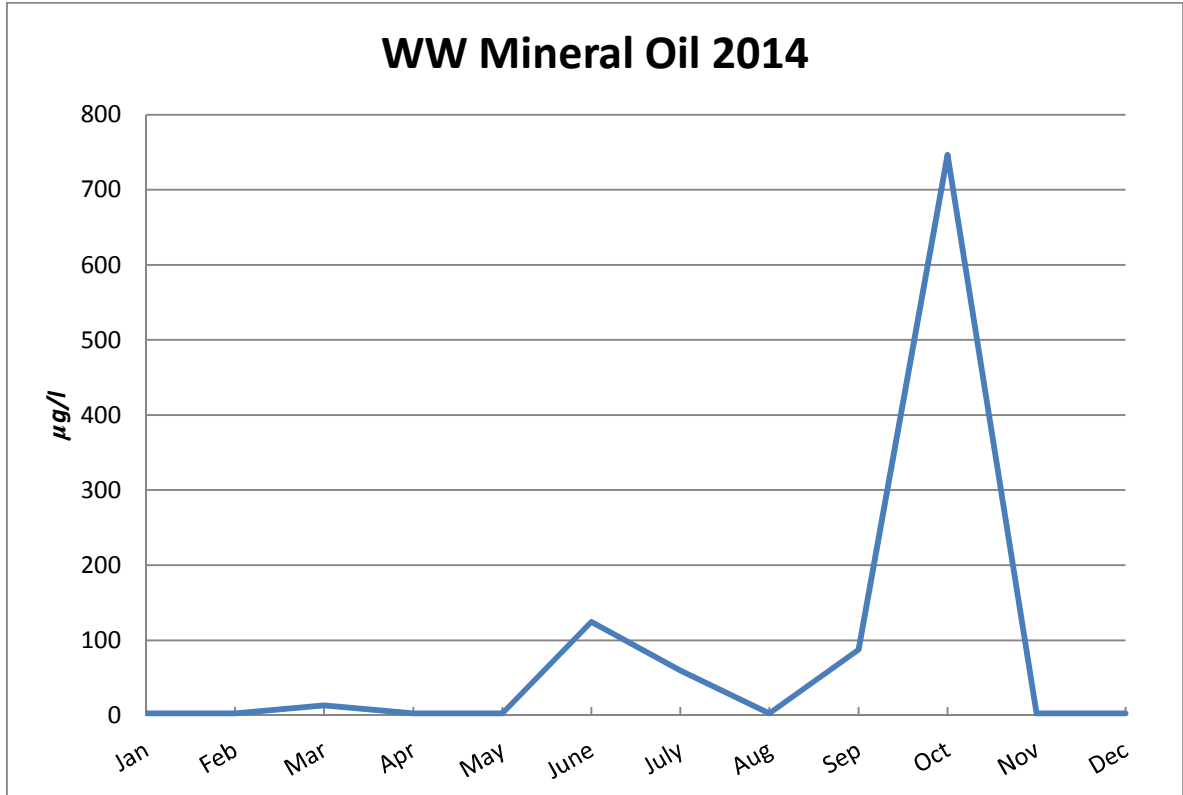


Figure 2.6 Wastewater – Mineral Oil Trend Data 2014

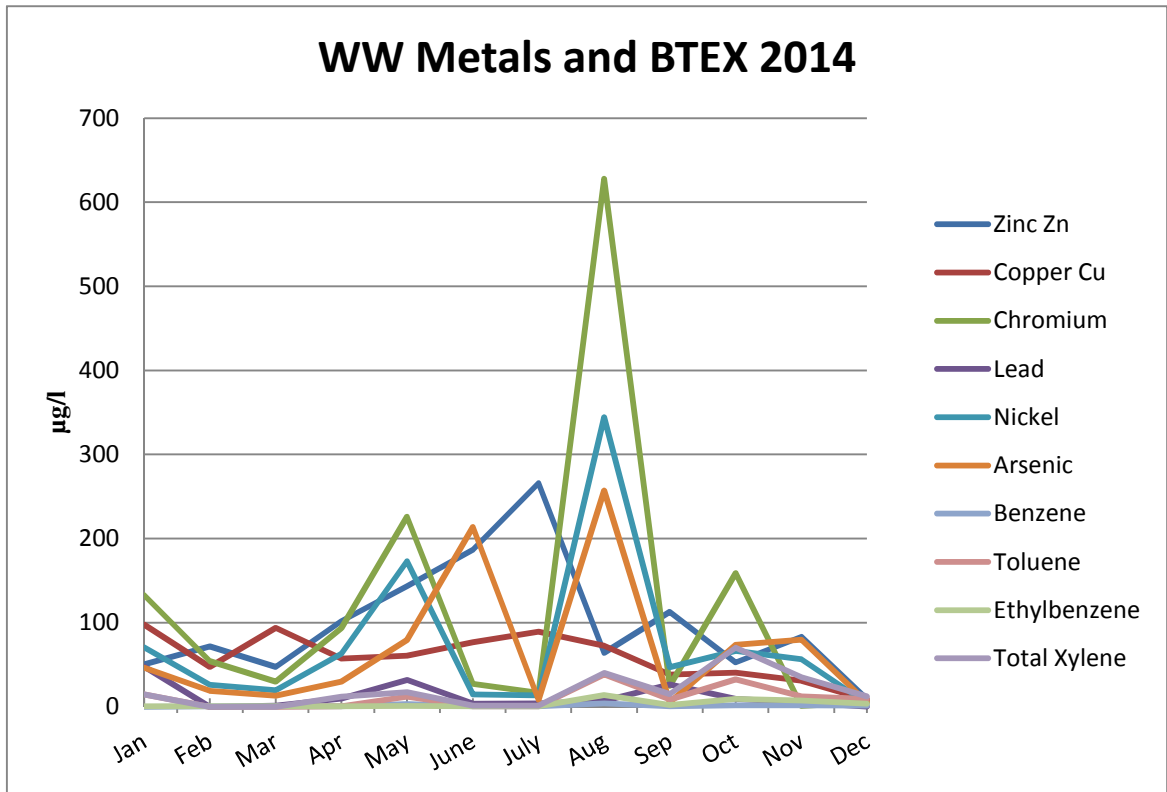


Figure 2.7 Wastewater – Metals and BTEX Trend Data 2014

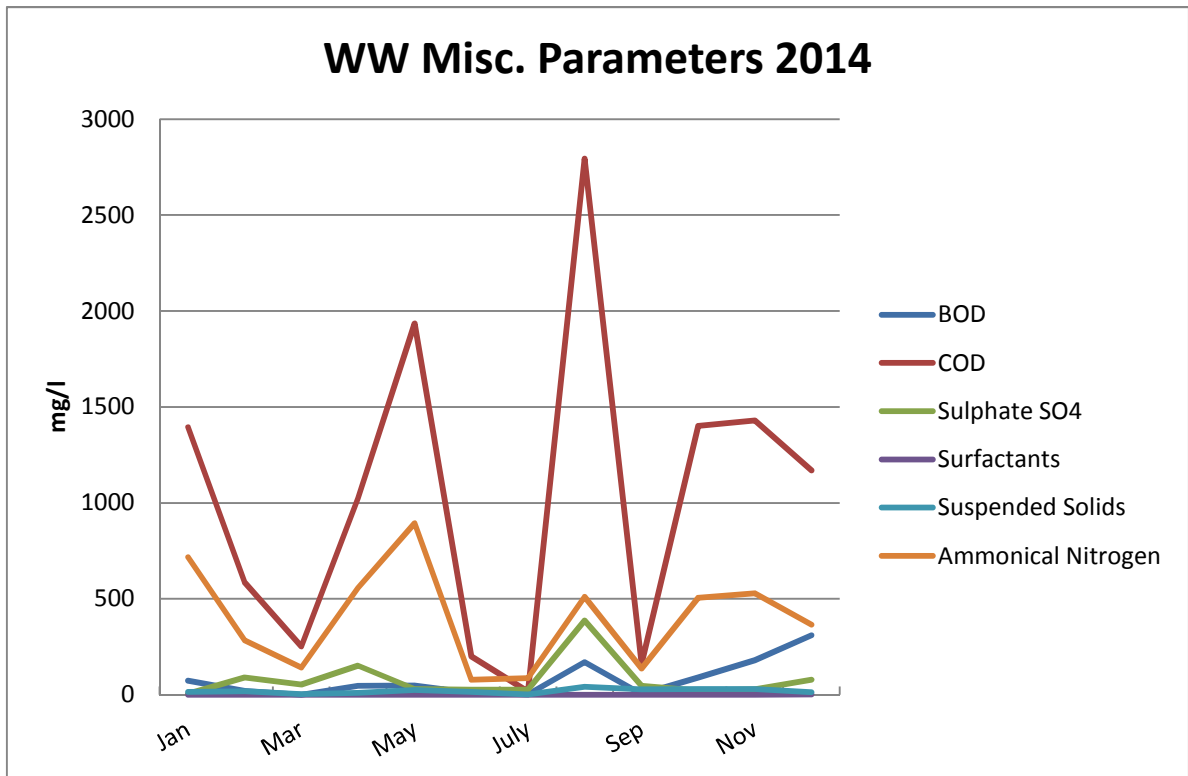


Figure 2.8 Wastewater – Miscellaneous Parameter Trend Data 2014

3 AMBIENT MONITORING

3.1 DUST

According to Schedule E of the waste licence, dust monitoring is required at the facility three times a year (twice between May and September), at monitoring locations D1, D2, D3 & D4 (i.e at the 4 no. corner boundaries of the RILTA facility), as illustrated on Drawing 4709-1107 (see Appendix A). The dust samples were analysed by Fitz Scientific Laboratories.

The results for each sample location D1, D2, D3 and D4 are included in Appendix C and summarised on Table 3.1 below.

During the Q1 2014 monitoring period, no dust monitoring exceeded the mean daily deposition limit of 350mg/m²/day set in schedule C.3. of the waste licence.

During the Q2 2014 monitoring period, dust levels exceeded the mean daily deposition limit of 350mg/m²/day at monitoring locations D2 and D3. At all locations, greater than 50% of the dust recorded was of organic composition and a large acorn was noted in the D2 sample on collection. Exceedances on this occasion has therefore been attributed to in-fall from trees surrounding the dust jars.

During the Q3 2014 monitoring period, dust levels exceeded the mean daily deposition limit of 350mg/m²/day at monitoring location D4. Monitoring location D4 is located in the south east of the site, within a treeline. Greater than 50% of the dust recorded was of organic composition. The exceedance on this occasion has therefore been attributed to in-fall from trees surrounding the dust jar.

Table 3.1 Dust Monitoring Results 2014

Monitoring Period	D1 (mg/m ² /d)	D2 (mg/m ² /d)	D3 (mg/m ² /d)	D4 (mg/m ² /d)
29/01/14 - 26/02/14	44.04	62.91	238	63.43
15/05/14 - 13/06/14	243.77	579.13	507.98	257.40
25/07/14 - 22/08/14	124.24	226.99	340.23	401.56

3.2 VOC EMISSIONS

Odour Monitoring Ireland were commissioned by Rilta Environmental Limited to perform Volatile Organic Compound (VOC) monitoring of the three licensed emission points located within the facility on a biannual basis. Monitoring was carried out on the 7th of August and the 6^h of November 2014 (Round 1 and 2, respectively). With the exception of Volume Flow Rate for location A2, all results from the 2014 monitoring were in compliance with required limits. Measured volumetric airflow rate at A2 was 6,235Nm³/hr during the August monitoring event and 6,271 Nm³/hr during the November

monitoring event, which exceeded the limit volumetric airflow rate at A2 (5,292 Nm³/hr). The full report from OMI detailing ambient emissions from the RILTA facility is contained in Appendix E.

4 NOISE MONITORING

The noise emission limits given in Waste Licence 192-03 are 55 dB(A) for daytime and 45 dB(A) for night time. These levels specifically relate to noise emissions arising from the facility, measured at any noise sensitive location. A more detailed noise monitoring report for this period is contained in Appendix D. The noise emissions recorded are summarised in Table 4.1 and Table 4.2 below.

Table 4.1 RILTA Daytime Noise 2014

DAY TIME						
Receptor	Time	Leq dB(A)	Leq dB(A)*	L10	L90	Notes
N1	12:07	42.40		44.87	36.93	N1 is located at the south-western boundary of the site, adjacent to the site car park and to the access road to RILTA within Greenogue Business Park. Noise at this location during daytime monitoring was dominated by internal industrial estate traffic passing the site. Distant traffic, aircraft passing overhead and vehicle movements at adjacent premises were also audible. Site activity was occasionally audible at this location during daytime monitoring.
N2	13:57	38.60	43.6	41.15	36.00	N2 is located in the north-western corner of the site. Activities at adjacent premises and passing aircraft were audible during daytime monitoring. The site was also audible at N2 during the daytime survey.
N3	13:20	38.60		40.75	33.50	N3 is located at the north-eastern site boundary, adjacent to the tank farm. At this location, activities at the adjacent facility were the dominant noise source. Passing aircraft also contributed to daytime noise levels at N3. Onsite activity was audible at low levels.
N4	12:45	54.4	59.4	55.87	52.53	N4 is located in the south-eastern corner of the site adjacent to the access road to RILTA within Greenogue Business Park. Onsite activity (barrels being moved and

						radio on) and passing road traffic were the dominant noise sources during daytime monitoring. Passing aircraft also contributed to noise levels.
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Leq* is Leq following application of any 5dB(A) penalties incurred.

Table 4.2 RILTA Night Time Noise 2014

NIGHT TIME					
Receptor	Time	Leq dB(A)	L10	L90	Notes
N1	01:35	34.00	32.93	31.22	Noise at this location during night time monitoring was dominated by passing traffic and a siren in the distance. A dog occasionally barking was also audible. The site was not audible at this location during night time monitoring.
N2	02:45	35.4	36.72	34.18	Night time noise sources included noise from the adjacent flowing stream. A low hum was also audible from the site at N2 during the night time survey.
N3	03:18	32.70	33.76	32.08	Night time noise at this location was dominated by passing traffic. The facility was not audible at this location during night time monitoring.
N4	02:10	36.1	32.88	31.20	Noise at location N4 during night time monitoring was dominated by passing traffic. The site was not audible at this location during night time monitoring.

Noise levels recorded at the four EPA agreed noise monitoring locations contain noise emissions from adjacent industrial sites, low flying aircraft and traffic on the internal road network of the industrial estate. During daytime monitoring, noise emissions from the RILTA facility was audible at monitoring locations N4 and a low hum was audible coming from the site at N2 and N3. Site activity was occasionally audible at low levels at N1 during daytime monitoring.

The A-weighted equivalent continuous sound pressure level (LAeq, 30 min) recorded at the RILTA facility did not exceed the limit of 55 dB(A) at any noise monitoring location during daytime or night time monitoring.

A tone was also observed at location N2 at 100Hz during the daytime survey, a 5dB(A) penalty has therefore been applied to this location bringing the Leq to 43.6dB(A).

Tones were also observed at N4 (25Hz, 50Hz and 630Hz) during the daytime survey. Although passing traffic and overhead aircraft contributed to the noise levels at this location, site activity and a radio on in one of the facilities' warehouses was also highly audible at this location. A 5dB(A) penalty has therefore been applied to this location bringing the Leq to **59.4dB(A)**, which exceeds the limit of 55dB(A).

During the night time monitoring period, a low hum was audible from the site at monitoring location N2. During the night time monitoring period the A- weighted equivalent continuous sound pressure level (LAeq, 30 min) of 45 dB(A) (night time) was not exceeded at any location.

No tones were observed following night time noise monitoring at the facility.

There were no impulsive noise emissions audible at any of the monitoring locations during the daytime or night time monitoring period.

Note that the EPA agreed noise monitoring locations are all on site and do not reflect emissions at noise sensitive locations.

Full 1/3 octave frequency band analysis of both day and night time surveys is attached to the noise monitoring report for this period contained in Appendix D.

Table 10.1 Raw Material usage 2011-2014

	2011	2012	2013	2014
56% Solids Paint	2,200 L	Nil	5,500L	5, 111L
65% Solids Paint	6,100L	6,800L	Nil	Nil
Xylene	200L	240L	180L	200L
Acetone	25L	25L	50L	0

11 DEVELOPMENT/INFRASTRUCTURAL WORKS

In 2014, structural repairs were carried out on the walls of the truck wash area. The existing trade effluent line was decommissioned and replaced with an over ground line. Existing cracks in the hard-standing surface of the yard were repaired using a bitumen sealer.

12 COMPLAINTS SUMMARY

There were two complaints received during 2014. The first complaint was from an industrial neighbour in relation to smoke emanating from a boiler which was faulty. This was immediately mitigated and the problem did not repeat itself. The second complaint was in relation to odour, contact was made with the neighbour who raised the complaint and any fears they had were allayed.

13 FINANCIAL PROVISION

Financial provision at the RILTA facility is currently under review.

13.1 MANAGEMENT AND STAFFING STRUCTURE

Mr. Sean Cotter was installed as General Manager for the Rilta Site in December 2014. Details of the current management and staffing structure are contained in Appendix H.

13.2 PROGRAMME FOR PUBLIC INFORMATION

RILTA maintains a 'Public File' which contains all correspondence between RILTA and the Agency, all waste data and monitoring data as required by waste licence 0192-03. This file is available for viewing during normal office hours.

14 DECOMMISSIONING MANAGEMENT PLAN

The Decommissioning Management Plan at RILTA was agreed with the Agency in 2014 and is attached in Appendix I.

14.1 PREVENTION OF ENVIRONMENTAL DAMAGE AND REMEDIAL ACTIONS (ENVIRONMENTAL LIABILITIES)

Environmental damage and Liabilities at the RILTA facility is currently under review.

14.2 ENVIRONMENTAL LIABILITIES RISK ASSESSMENT (ELRA)

Environmental Liabilities Risk Assessment at the RILTA facility is currently under review.

APPENDIX A

Site Map

Monitoring Point Locations (to National Grid Reference)

Groundwater Monitoring Points
 BH1 E301555, N 228440
 BH2 E301600, N228550
 BH3 E301630, N228555

Underground Settlement Tank Monitoring Points
 GW1 E301630, N228515
 GW2 E301650, N228540
 GW3 E301625, N228540

Surface Water/Invertebrate Monitoring Points
 SW1/KS1 E301670, N228562
 SW2/KS2 E301565, N228555
 SW3 (Proposed) E301480, N228560

Dust Monitoring Points
 D1 E301630, N228450
 D2 E301580, N228550
 D3 E301670, N228555
 D4 E301630, N228420

Noise Monitoring Points
 N1 E301630, N228450
 N2 E301580, N228550
 N3 E301670, N228555
 N4 E301630, N228420

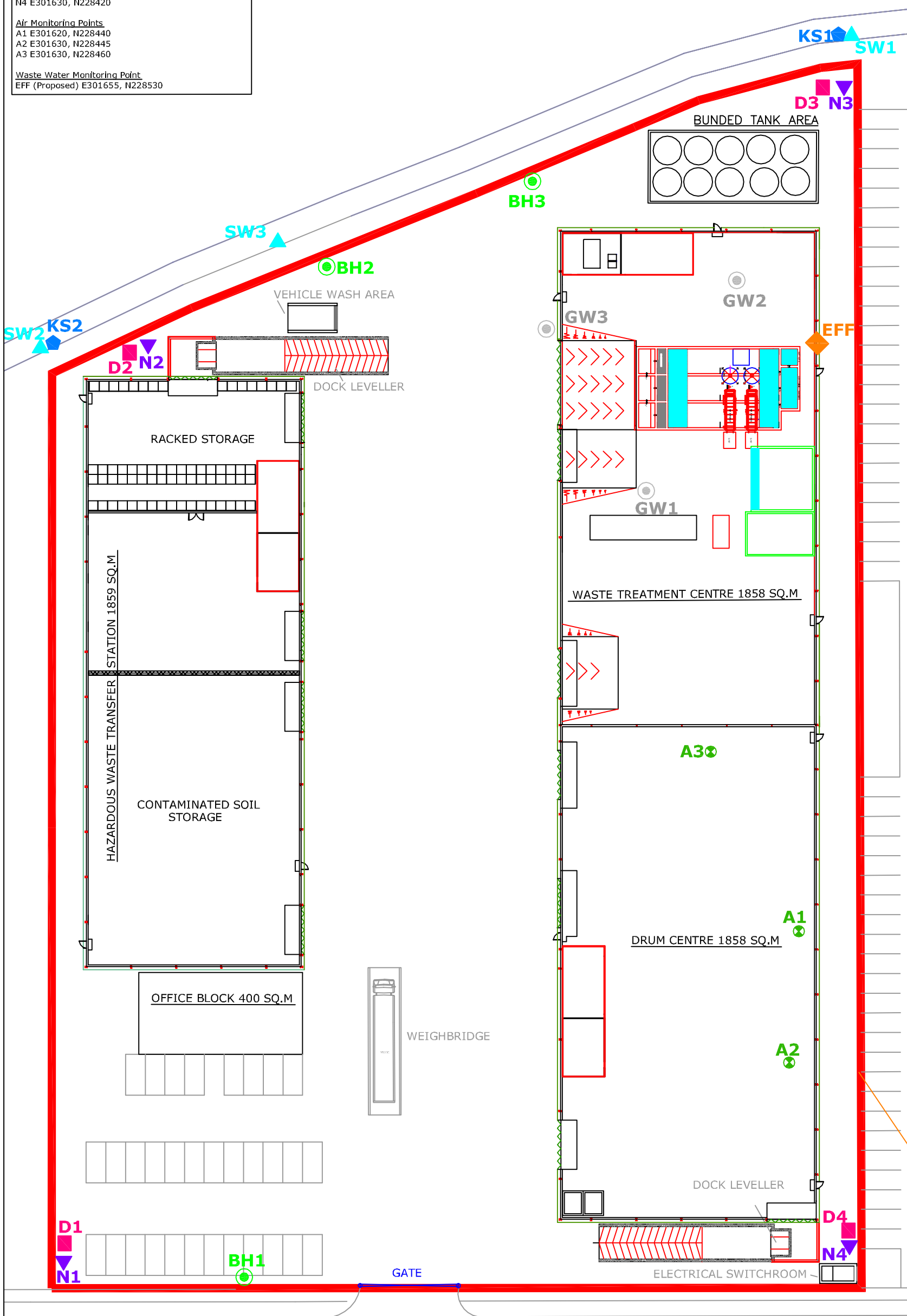
Air Monitoring Points
 A1 E301620, N228440
 A2 E301630, N228445
 A3 E301630, N228460

Waste Water Monitoring Point
 EFF (Proposed) E301655, N228530

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Legend:

- ▬▬▬▬▬▬ Licence Boundary
- ▲ Surface Water Monitoring Points
- ◆ Invertebrate Kick Sampling Monitoring Points
- Dust Monitoring Points
- ▼ Noise Monitoring Points
- ◆ Waste Water Monitoring Point
- Groundwater Monitoring Points
- Underground Settlement Tank Monitoring Points
- ⊗ Air Monitoring Points



- Notes:
1. Figured Dimensions only to be taken from this drawing
 2. All Drawings to be checked by the Contractor on site
 3. Engineer to be informed of any discrepancies before any work commences
 4. All levels relate to Ordnance Survey Datum at Mean Head

Client	date	Int
Drawing Title		
SITE LAYOUT PLAN		
Project		
INTEGRATED WASTE MANAGEMENT FACILITY, GREENOGUE, CO. DUBLIN		
Scale: 1/500	Checked by	Date
Drawn by	DAMIENGREHAN	January 2007
ENGINEER IN CHARGE: DAMIEN GREHAN		
		
Drawing No. 1250/01/1002		
Rev.		

APPENDIX B

Environmental Management Programme 2014 & 2015

RILTA ENVIRONMENTAL Ltd.

ENVIRONMENTAL MANAGEMENT SYSTEM



ENVIRONMENTAL MANAGEMENT PLAN

In accordance with
ISO 14001

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND TARGETS

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
1	Increase environmental awareness among RILTA staff.	Develop a sustainable monthly tool box talk to take into account all aspects of environmental risk on site.	Develop software to maintain record of tool box talks	CH	June 14	
			Develop topics and content	CH	Sept 14	
			Group suitable staff and begin talks	CH	Oct 14	
2	Optimize waste tracking from cradle to grave	Install suitable waste tracking system for all waste	Agree wish list.	CH/DM	Feb 14	
			Put list out to tender	CH/DM	Mar 14	
			Assess feedback	CH/DM	June 14	
			Chose vendor	CH/DM	Sept 14	
			Install system	CH/DM	Jan 15	
			Snag system	CH/DM	March 15	

<i>Issue No.</i>	010	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Mar 2014	<i>Reviewed by: Name/Position</i>	Eftim Ivanoff Operations Director

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
3	Ensure quality drainage system	Complete all improvement suggestions in CCTV report	Move trade effluent line to an over-ground position along by treatment building wall Assess 3 no. pipe 'falls' and replace if possible	CH CH	July 13 Dec 17	
4	Ensure only clean water released to the river	No ELV breaches	Implement thorough cleaning of attenuation tank and repeat on a 3 year basis Skim storm water interceptor on a monthly basis Replace damaged concrete on a rota basis to ensure no damaged areas by 2015	CH CH CH	June 13 Ongoing Dec 14	

<i>Issue No.</i>	010	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Mar 2014	<i>Reviewed by: Name/Position</i>	Eftim Ivanoff Operations Director

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
5	Reduce use of hazardous raw materials used on site.	Implement the 'treat waste with waste' best practice method on an ongoing basis	Source suitable waste streams for treatment Laboratory approval for the usage of wastes for treatment	RS TMc	Ongoing Ongoing	
6	Optimize the quality of effluent discharged to sewer	Have re-usable water on tap	Investigate possibility of final effluent polish system Get approval from EPA	EI CH	Jan 15 June 15	

<i>Issue No.</i>	010	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Mar 2014	<i>Reviewed by: Name/Position</i>	Eftim Ivanoff Operations Director

<i>EMP Ref.</i>	<i>Objective</i>	<i>Target</i>	<i>Environmental Management Programme for the implementation of objectives.</i>	<i>Responsible Person</i>	<i>Completion Date</i>	<i>Completed (Y/N)</i>
7	To be a good and considerate neighbour.	No complaints	<p>Complete noise monitoring.</p> <p>Monitor adjoining river on a quarterly basis.</p> <p>Implement 'closed door' policy system when unloading liquid waste tankers where possible</p> <p>Cold cutting at the cedar site to take place inside with doors close</p> <p>Inform neighbours when bulk soil/sludge are being moved off site</p>	<p>CH</p> <p>CH</p> <p>CM/DG</p> <p>DG</p> <p>CH</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>	

<i>Issue No.</i>	010	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Mar 2014	<i>Reviewed by: Name/Position</i>	Eftim Ivanoff Operations Director

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
8	To Be Energy Efficient	Reduce Water and electricity usage	<p>Complete targeted energy audit at both 402 and 14A1 sites.</p> <p>Assess findings of audit.</p> <p>Implement findings of audit if economically and practically feasible.</p>	<p>CH</p> <p>CH/EI</p> <p>CH/EI</p>	<p>Aug 14</p> <p>July 14</p> <p>Dec 14</p>	

<i>Issue No.</i>	010	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Mar 2014	<i>Reviewed by: Name/Position</i>	Eftim Ivanoff Operations Director

RILTA ENVIRONMENTAL Ltd.

ENVIRONMENTAL MANAGEMENT SYSTEM

RILTA
Environmental
Limited



ENVIRONMENTAL MANAGEMENT PLAN

In accordance with
ISO 14001

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND TARGETS

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
1	Increase environmental awareness among RILTA staff.	Conduct site tours for all staff before end 2015	<p>Inform office staff/sales reps of intentions</p> <p>Collate staff into groups of no more than 5 persons per site tour</p> <p>Complete site walks on non month-end Fridays</p>	<p>CH</p> <p>CH</p>	<p>Apr 15</p> <p>Apr 15</p> <p>Dec 15</p>	
2	Optimize waste tracking from cradle to grave	Install suitable waste tracking system for all waste	<p>Chose vendor</p> <p>Test System</p> <p>Install system</p> <p>Snag system</p>	<p>CH/DM</p> <p>CH/DM</p> <p>CH/DM</p> <p>CH/DM</p>	<p>Feb 15</p> <p>Apr 15</p> <p>June 15</p> <p>July 15</p>	

<i>Issue No.</i>	011	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Feb 2015	<i>Reviewed by: Name/Position</i>	Sean Cotter General manager

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
3	Ensure quality drainage system	No leaks	Assess 3 no. pipe 'falls' and replace if possible	CH	Dec 15	
			Fix all cracks on hard-standing areas	CH	June 15	
			Re-coat the settlement tanks	CH/TMc	Dec 15	
4	Ensure only clean water released to the river	No ELV breaches	Implement thorough cleaning of attenuation tank and repeat on a yearly basis	CH/SH	June 15	
			Skim storm water interceptor on a monthly basis	CH/SH	Ongoing	
			Replace/Repair damaged concrete on a rota basis to ensure no damaged areas by 2016	CH/SH	Dec 15	
			Develop rota for both monthly and annual events	CH/SH	Apr 15	

<i>Issue No.</i>	011	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Feb 2015	<i>Reviewed by: Name/Position</i>	Sean Cotter General manager

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
5	Reduce use of hazardous raw materials used on site.	Implement the 'treat waste with waste' best practice method on an ongoing basis	Source suitable waste streams for treatment Laboratory approval for the usage of wastes for treatment	RS TMc	Ongoing Ongoing	
6	Optimize the quality of trade effluent	No ELV breaches	Clean 'wet wells' twice a year Clean DAF system twice a year	TMc TMc	Dec 15 Dec 15	

<i>Issue No.</i>	011	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Feb 2015	<i>Reviewed by: Name/Position</i>	Sean Cotter General manager

EMP Ref.	Objective	Target	Environmental Management Programme for the implementation of objectives.	Responsible Person	Completion Date	Completed (Y/N)
7	To be a good and considerate neighbour.	No complaints	<p>Complete noise monitoring.</p> <p>Monitor adjoining river on a quarterly basis.</p> <p>Implement 'closed door' policy system when unloading liquid waste tankers where possible</p> <p>Cold cutting at the cedar site to take place inside with doors close</p> <p>Inform neighbours when bulk soil/sludge are being moved off site</p> <p>Make contact with Fortunes and Bailey care on a quarterly basis</p>	<p>CH</p> <p>CH</p> <p>CM/DG</p> <p>DG</p> <p>CH</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p>	

<i>Issue No.</i>	011	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Feb 2015	<i>Reviewed by: Name/Position</i>	Sean Cotter General manager

<i>EMP Ref.</i>	<i>Objective</i>	<i>Target</i>	<i>Environmental Management Programme for the implementation of objectives.</i>	<i>Responsible Person</i>	<i>Completion Date</i>	<i>Completed (Y/N)</i>
8	To Be Energy Efficient	Reduce electricity usage by 5%	<p>Complete targeted energy audit at both 402 and 14A1 sites.</p> <p>Assess findings of audit.</p> <p>Implement findings of audit if economically and practically feasible.</p>	<p>CH</p> <p>CH/EI</p> <p>CH/EI</p>	<p>Aug 15</p> <p>Sept 15</p> <p>Dec 15</p>	

<i>Issue No.</i>	011	<i>Compiled by: Name/Position</i>	Colm Hussey Facility & Environmental Manager
<i>Date:</i>	Feb 2015	<i>Reviewed by: Name/Position</i>	Sean Cotter General manager

APPENDIX C

Dust Analysis Laboratory Results

A copy of this certificate is available on www.fitzsci.ie

Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/034/03
Customer PO		Date of Receipt	27/02/2014
Customer Ref	D1 29/01/14 - 26/02/14	Sampled On	26/02/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/02/2014
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	03/03/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0084	g	
Dust (mg/m2/day)	144	Gravimetry	44.04	mg/m2/day	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 03/03/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested

(P) : Presumptive Results

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Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/034/04
Customer PO		Date of Receipt	27/02/2014
Customer Ref	D2 29/01/14 - 26/02/14	Sampled On	26/02/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/02/2014
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	03/03/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0120	g	
Dust (mg/m2/day)	144	Gravimetry	62.91	mg/m2/day	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 03/03/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

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Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/034/05
Customer PO		Date of Receipt	27/02/2014
Customer Ref	D3 29/01/14 - 26/02/14	Sampled On	26/02/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/02/2014
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	03/03/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0454	g	
Dust (mg/m2/day)	144	Gravimetry	238	mg/m2/day	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 03/03/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

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Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/034/06
Customer PO		Date of Receipt	27/02/2014
Customer Ref	D4 29/01/14 - 26/02/14	Sampled On	26/02/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/02/2014
		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	03/03/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0121	g	
Dust (mg/m2/day)	144	Gravimetry	63.43	mg/m2/day	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 03/03/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested

(P) : Presumptive Results

**The analytical result for this parameter may not be reflective of the concentration present at the time of sampling. The maximum recommended preservation time for this parameter has been exceeded.

A copy of this certificate is available on www.fitzsci.ie

Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/038/03
Customer PO		Date of Receipt	19/06/2014
Customer Ref	D1 15/05/14 - 13/06/14	Sampled On	13/06/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	19/06/2014
Ref 3		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	24/06/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0465	g	
Dust (mg/m ² /day)	144	Gravimetry	243.77	mg/m ² /day	
Inorganic Dust	311	Calculation	0.0223	g	
Organic Dust	311	Ashing @ 500°C	0.0242	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 24/06/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested (P) : Presumptive Results

** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)

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Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/038/04
Customer PO		Date of Receipt	19/06/2014
Customer Ref	D2 15/05/14 - 13/06/14	Sampled On	13/06/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	19/06/2014
Ref 3		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	24/06/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.1099	g	
Dust (mg/m2/day)	144	Gravimetry	576.13	mg/m2/day	
Inorganic Dust	311	Calculation	0.039	g	
Organic Dust	311	Ashing @ 500°C	0.0709	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 24/06/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

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A copy of this certificate is available on www.fitzsci.ie

Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/038/05
Customer PO		Date of Receipt	19/06/2014
Customer Ref	D3 15/05/14 - 13/06/14	Sampled On	13/06/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	19/06/2014
Ref 3		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	24/06/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0969	g	
Dust (mg/m2/day)	144	Gravimetry	507.98	mg/m2/day	
Inorganic Dust	311	Calculation	0.0454	g	
Organic Dust	311	Ashing @ 500°C	0.0515	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 24/06/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

Results shall not be reproduced, except in full, without the approval of Fitz Scientific

Results contained in this report relate only to the samples tested (P) : Presumptive Results

** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)

A copy of this certificate is available on www.fitzsci.ie

Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/038/06
Customer PO		Date of Receipt	19/06/2014
Customer Ref	D4 15/05/14 - 13/06/14	Sampled On	13/06/2014
Ref 2	Rilita Greenogue (Block 402) Ref: 3084	Date Testing Commenced	19/06/2014
Ref 3		Received or Collected	Courier: DPD
		Condition on Receipt	Acceptable
		Date of Report	24/06/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0491	g	
Dust (mg/m2/day)	144	Gravimetry	257.4	mg/m2/day	
Inorganic Dust	311	Calculation	0.0246	g	
Organic Dust	311	Ashing @ 500°C	0.0245	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 24/06/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU Drinking water Regulations (SI 278 2007)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

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Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/040/05
Customer PO		Date of Receipt	27/08/2014
Customer Ref	D1	Sampled On	22/08/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/08/2014
Ref 3		Received or Collected	By Fitz: Adrian
		Condition on Receipt	Acceptable
		Date of Report	08/09/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0237	g	
Dust (mg/m2/day)	144	Gravimetry	124.24	mg/m2/day	
Inorganic Dust	311	Calculation	0.0031	g	
Organic Dust	311	Ashing @ 500°C	0.0206	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 08/09/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU (Drinking water) Regulations (SI 122 2014)

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** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)

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Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/040/06
Customer PO		Date of Receipt	27/08/2014
Customer Ref	D2	Sampled On	22/08/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/08/2014
Ref 3		Received or Collected	By Fitz: Adrian
		Condition on Receipt	Acceptable
		Date of Report	08/09/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0433	g	
Dust (mg/m2/day)	144	Gravimetry	226.99	mg/m2/day	
Inorganic Dust	311	Calculation	0.0172	g	
Organic Dust	311	Ashing @ 500°C	0.0261	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 08/09/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU (Drinking water) Regulations (SI 122 2014)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

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Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/040/07
Customer PO		Date of Receipt	27/08/2014
Customer Ref	D3	Sampled On	22/08/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/08/2014
Ref 3		Received or Collected	By Fitz: Adrian
		Condition on Receipt	Acceptable
		Date of Report	08/09/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0649	g	
Dust (mg/m2/day)	144	Gravimetry	340.23	mg/m2/day	
Inorganic Dust	311	Calculation	0.0374	g	
Organic Dust	311	Ashing @ 500°C	0.0275	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 08/09/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU (Drinking water) Regulations (SI 122 2014)

All organic results are analysed as received and all results are corrected for dry weight at 104 C

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Results contained in this report relate only to the samples tested (P) : Presumptive Results

** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)

A copy of this certificate is available on www.fitzsci.ie

Customer	Jessica Quinn Tobin Consulting Engineers TES Block 10-4 Blanchardstown Corp PK Dublin 15 Dublin	Lab Report Ref. No.	1102/040/08
Customer PO		Date of Receipt	27/08/2014
Customer Ref	D4	Sampled On	22/08/2014
Ref 2	Rilta Greenogue (Block 402) Ref: 3084	Date Testing Commenced	27/08/2014
Ref 3		Received or Collected	By Fitz: Adrian
		Condition on Receipt	Acceptable
		Date of Report	08/09/2014
		Sample Type	Other

CERTIFICATE OF ANALYSIS

Test Parameter	SOP	Analytical Technique	Result	Units	Acc.
Dust	144	Gravimetry	0.0766	g	
Dust (mg/m2/day)	144	Gravimetry	401.56	mg/m2/day	
Inorganic Dust	311	Calculation	0.0284	g	
Organic Dust	311	Ashing @ 500°C	0.0482	g	

Signed : 
Aoife Harmon - Technical Supervisor

Date : 08/09/2014

Acc. : Accredited Parameters by ISO 17025:2005

PVL - Parametric Value Limit as per EU (Drinking water) Regulations (SI 122 2014)

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** : The test result for this parameter may be invalid as it has exceeded the recommended holding time (BS EN ISO 5667-3:2012)

APPENDIX D

Annual Noise Monitoring Report

RILTA
*Environmental
Limited*



Annual Noise Monitoring Report 2014

TOBIN CONSULTING ENGINEERS



REPORT

PROJECT:

**Rilta Environmental Ltd.
Greenogue Monitoring.**

CLIENT:

**Rilta Environmental Ltd,
Block 402, Greenogue Business Park,
Rathcoole,
County Dublin.**

COMPANY:

**TOBIN Consulting Engineers
Block 10 – 4,
Blanchardstown Corporate Park,
Dublin 15.**

www.tobin.ie

DOCUMENT AMENDMENT RECORD

Client:	Rilta Environmental Ltd
Project:	Greenogue Monitoring
Title:	Annual Noise Monitoring Report 2014

PROJECT NUMBER: 3084			DOCUMENT REF: 3084 – 04 – 01		
Rev A	Quarterly Report	JQ	CK	DG	09/10/14
Revision	Description	Originated	Checked	Authorised	Date

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2.1	INSTRUMENTATION USED	1
2.2	MEASUREMENT PROCEDURE.....	1
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Appendix A	Noise Monitoring Locations
Appendix B	1/3 Octave Frequency Analysis Day and Night Noise Surveys

1 INTRODUCTION

This report deals with the noise monitoring requirement conditions of RILTA Environmental Ltd. (RILTA) hazardous waste facility at Greenogue Business Park, Rathcoole, Co. Dublin, Waste Licence No. 192-03.

2 NOISE MONITORING SURVEY

TOBIN Consulting Engineers (TOBIN) was commissioned by RILTA to carry out an annual day and night time noise survey at their facility in Greenogue Business Park. The noise survey was carried out within the site boundary of the waste facility at four no. locations agreed with the EPA (see Appendix A). Weather conditions during monitoring event were dry and calm with an occasional slight breeze. The following conditions were adhered to in undertaking the survey:

- Measurement of noise levels was undertaken using Type 1 instrumentation;
- Cognisance was taken of the EPA's 'Guidance Note for Noise: Licence Applications, Surveys and Assessments in relation to Scheduled Activities (NG4); and,
- The survey was carried out in accordance with ISO 1996 Acoustics - Description and Measurement of Environmental Noise: Parts 1/2/3.

2.1 INSTRUMENTATION USED

The following instrumentation was used in the environmental noise monitoring survey:

- One Larson Davis 824 Precision Integrating Sound Level Analyser/Data logger with Real-Time Frequency Analyser Facility;
- Wind Shield Type: Larson Davis 2120 Windscreen; and
- Calibration Type: Larson Davis Precision Acoustic Calibrator Model CA200.

2.2 MEASUREMENT PROCEDURE

Daytime and night time noise monitoring was carried out on the 9th of September 2014 by TOBIN personnel. Noise monitoring was undertaken for 30 minute intervals at four agreed EPA locations. All the environmental noise analysers had data logging facilities were set on real-time, the logged data was later downloaded via a personal computer using software. One third octave frequency analysis was taken at the locations using the 824 Precision Integrating Sound Level Analyser/Data logger with real-time frequency analyser facility.

The measurement locations were all away from reflecting surfaces and at 1.5m height above local ground.

2.3 RESULTS OF NOISE SURVEY

The noise monitoring locations are summarised in Table 2.1 below and shown in Appendix A. The results of the noise survey are given in Table 2.2. The 1/3 octave frequency analysis data is given in graphical format in Appendix B.

Table 2.1 **Noise Monitoring Locations**

Monitoring Location	Description
N1	South western boundary of site
N2	North western boundary of site
N3	North eastern boundary of site
N4	South eastern boundary of site

Location N1

Noise monitoring location N1 is located at the south-western boundary of the site, adjacent to the site car park and to the access road to RILTA within Greenogue Business Park. Noise at this location during daytime monitoring was dominated by internal industrial estate traffic passing the site. Distant traffic, aircraft passing overhead and vehicle movements at adjacent premises were also audible. Site activity was occasionally audible at this location during daytime monitoring.

Noise at this location during night time monitoring was dominated by passing traffic and a siren in the distance. A dog occasionally barking was also audible. The site was not audible at this location during night time monitoring.

Location N2

N2 is located in the north-western corner of the site. Activities at adjacent premises and passing aircraft were audible during daytime monitoring. The site was also audible at N2 during the daytime survey.

Night time noise sources included noise from the adjacent flowing stream. A low hum was also audible from the site at N2 during the night time survey.

Location N3

N3 is located at the north-eastern site boundary, adjacent to the tank farm. At this location, activities at the adjacent facility were the dominant noise source. Passing aircraft also contributed to daytime noise levels at N3. Onsite activity was audible at low levels.

Night time noise at this location was dominated by passing traffic. The facility was not audible at this location during night time monitoring.

Location N4

Noise monitoring location N4 is located in the south-eastern corner of the site adjacent to the access road to RILTA within Greenogue Business Park. Onsite activity (barrels being moved and radio on) and passing road traffic were the dominant noise sources during daytime monitoring at N4. Passing aircraft also contributed to noise levels.

Noise at location N4 during night time monitoring was dominated by passing traffic. The site was not audible at this location during night time monitoring.

Table 2.2 Noise Monitoring Results – dB(A) and 30 minute intervals

Daytime Results				
Receptor	Time	Leq	L10	L90
N1	12:07	42.40	44.87	36.93
N2	13:57	38.60	41.15	36.00
N3	13:20	38.60	40.75	33.50
N4	12:45	54.4	55.87	52.53
Night Time Results				
Receptor	Time	Leq	L10	L90
N1	01:35	34.00	32.93	31.22
N2	02:45	35.4	36.72	34.18
N3	03:18	32.70	33.76	32.08
N4	02:10	36.1	32.88	31.20

3 CONCLUSIONS

The noise emission limits given in Waste Licence 192-03 are 55 dB(A) for daytime and 45 dB(A) for night time. These levels specifically relate to noise emissions arising from the facility, measured at any noise sensitive location.

The daytime and night time noise emissions from RILTA Environmental Ltd are summarised in Table 2.2 above.

Noise levels recorded at the four EPA agreed noise monitoring locations contain noise emissions from adjacent industrial sites, low flying aircraft and traffic on the internal road network of the industrial estate. During daytime monitoring, noise emissions from the RILTA facility was audible at monitoring location N4 and a low hum was audible coming from the site at N2 and N3. The site was not audible at N2.

The A-weighted equivalent continuous sound pressure level (LAeq, 30 min) recorded at the RILTA facility did not exceed the limit of 55 dB(A) at any noise monitoring location during daytime or night time monitoring.

A tone was also observed at location N2 at 100Hz during the daytime survey, a 5dB(A) penalty has therefore been applied to this location bringing the Leq to 43.6dB(A).

Tones were also observed at N4 (25H, 50Hz and 630Hz) during the daytime survey. Although passing traffic and overhead aircraft contributed to the noise levels at this location, site activity and a radio on in one of the facilities' warehouses was also highly audible at this location. A 5dB(A) penalty has therefore been applied to this location bringing the Leq to 59.4dB(A), which exceeds the limit of 55dB(A).

During the night time monitoring period, a low hum was audible from the site at monitoring location N2. During the night time monitoring period the A- weighted equivalent continuous sound pressure level (LAeq, 30 min) of 45 dB(A) (night time) was not exceeded at any location.

No tones were observed following night time noise monitoring at the facility.

There were no impulsive noise emissions audible at any of the monitoring locations during the daytime or night time monitoring period.

Note that the EPA agreed noise monitoring locations are all on site and do not reflect emissions at noise sensitive locations.

Full 1/3 octave frequency band analysis of both day and night time surveys is presented in Appendix B.

APPENDIX A

Noise Monitoring Locations

Groundwater Monitoring Points

BH1 E301566, N 228562
 BH2 E301607, N228557
 BH3 E301599, N228557

Underground Settlement Tank Monitoring Points

GW1 E301664, N228566
 GW2 E301650, N228540
 GW3 E301625, N228540

Surface Water/Invertebrate Monitoring Points

SW1/KS1 E301664, N228566
 SW2/KS2 E301567, N228562
 SW3 E301603, N228563

Dust Monitoring Points

D1 E301536, N228449
 D2 E301567, N228562
 D3 E301664, N228566
 D4 E301639, N228427

Noise Monitoring Points

1 E301536, N228449
 2 E301567, N228562
 3 E301664, N228566
 4 E301639, N228427

Air Monitoring Points

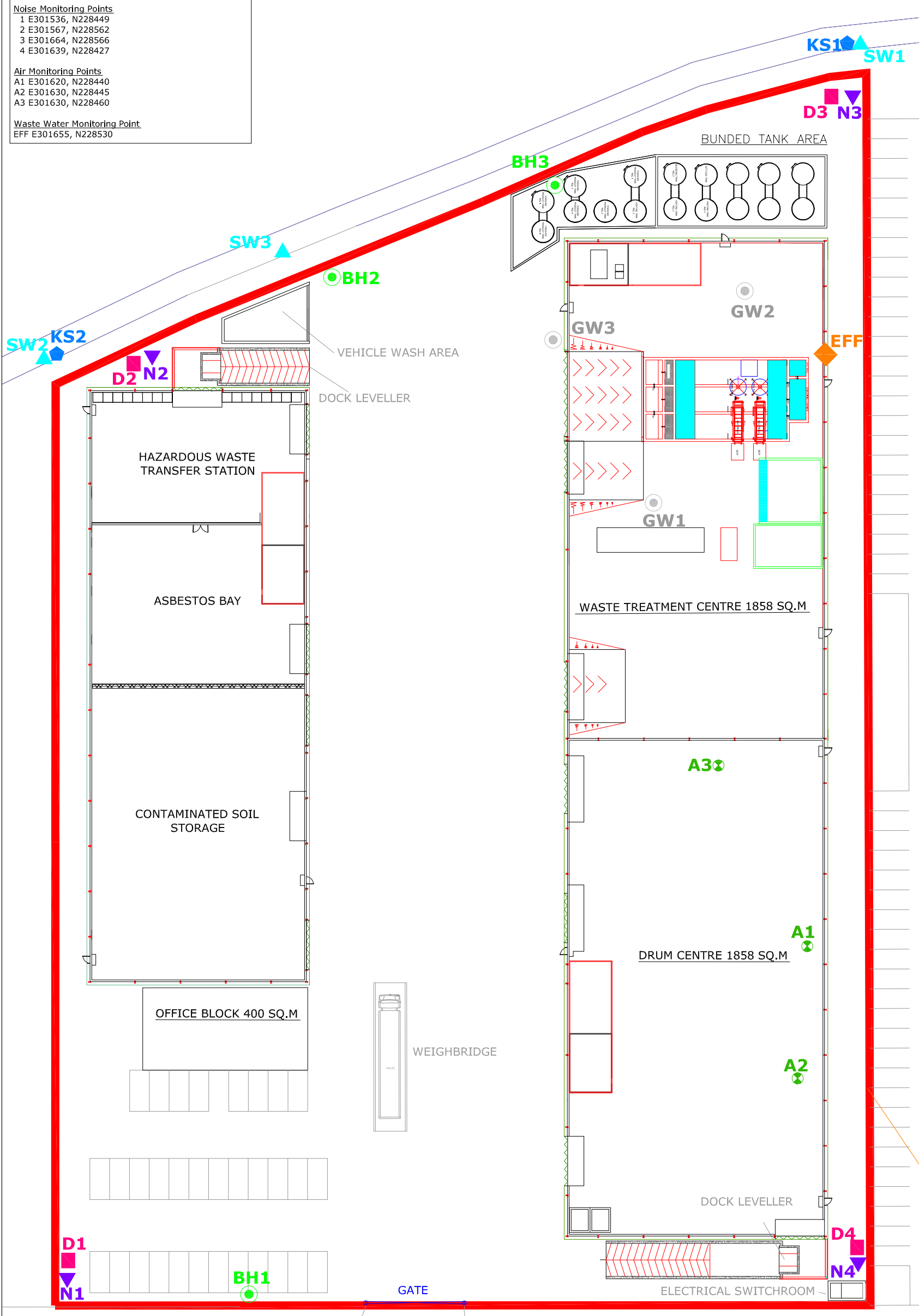
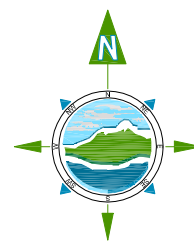
A1 E301620, N228440
 A2 E301630, N228445
 A3 E301630, N228460

Waste Water Monitoring Point

EFF E301655, N228530

GENERAL LEGEND

- LICENCE BOUNDARY
- SURFACE WATER MONITORING POINTS
- INVERTEBRATE KICK SAMPLING MONITORING POINTS
- DUST MONITORING POINTS
- NOISE MONITORING POINTS
- WASTE WATER MONITORING POINT
- GROUNDWATER MONITORING POINTS
- UNDERGROUND SETTLEMENT TANK MONITORING POINTS
- AIR MONITORING POINTS



- NOTES**
- FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
 - ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
 - ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
 - ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
A	27.09.11	ISSUED FOR REVIEW	MN	ST

Client:

Project: **INTEGRATED WASTE MANAGEMENT FACILITY GREENOGUE, CO. DUBLIN**

Title: **ENVIRONMENTAL MONITORING POINTS**

Scale @ A1: 1:250

Prepared by:	Checked:	Date:
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Revision: **A**

Drawing No.: **4709-1107**

APPENDIX B

1/3 Octave Frequency Analysis Day & Night Noise Surveys

Figure 1 N1 Daytime Frequency Analysis

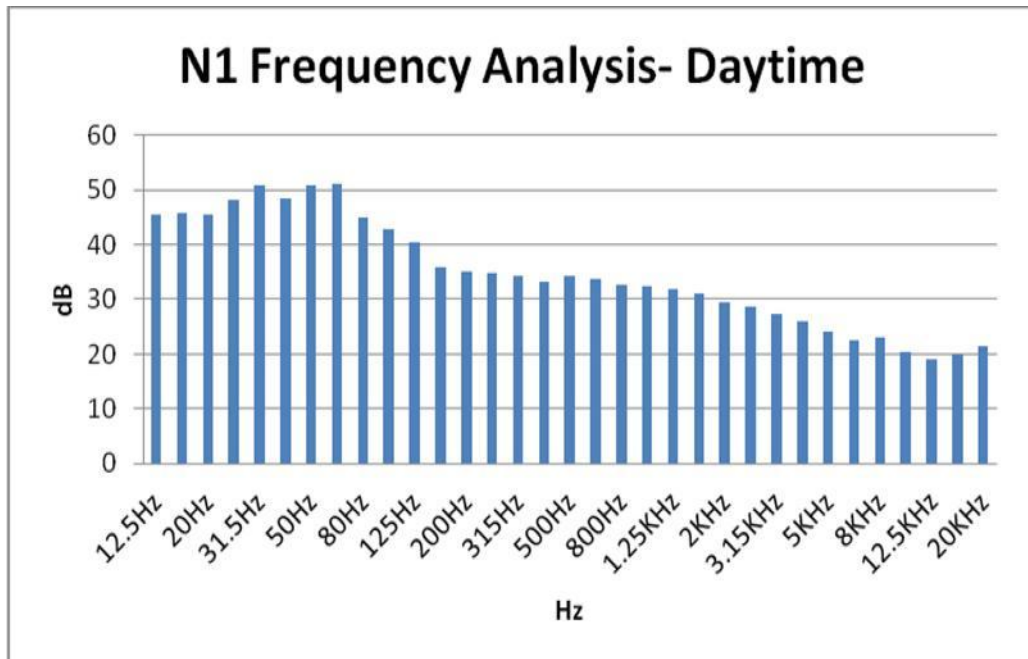


Figure 2 N1 Night Time Frequency Analysis

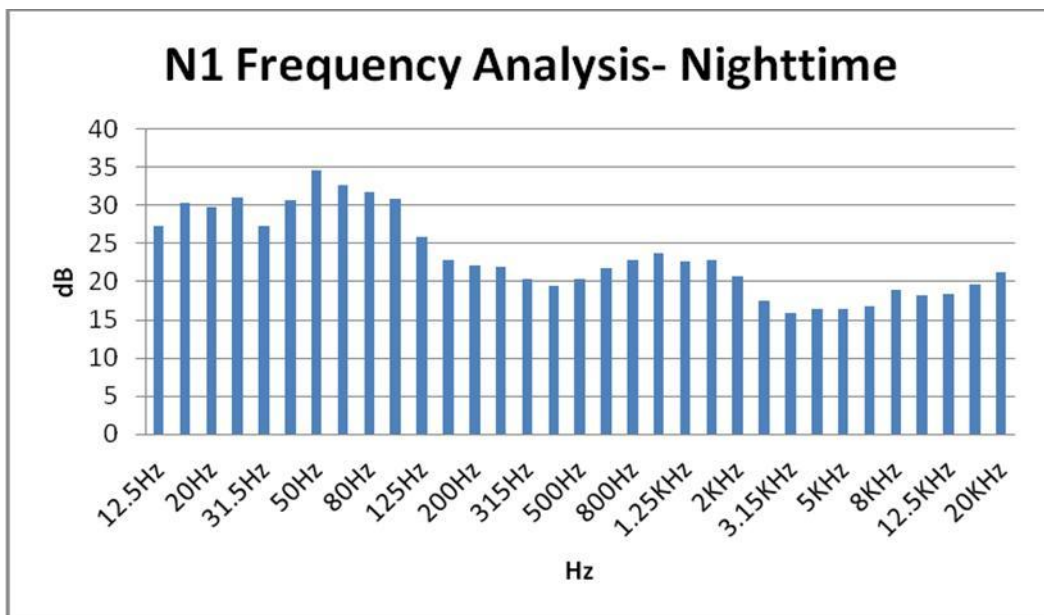


Figure 3 N2 Day Time Frequency Analysis

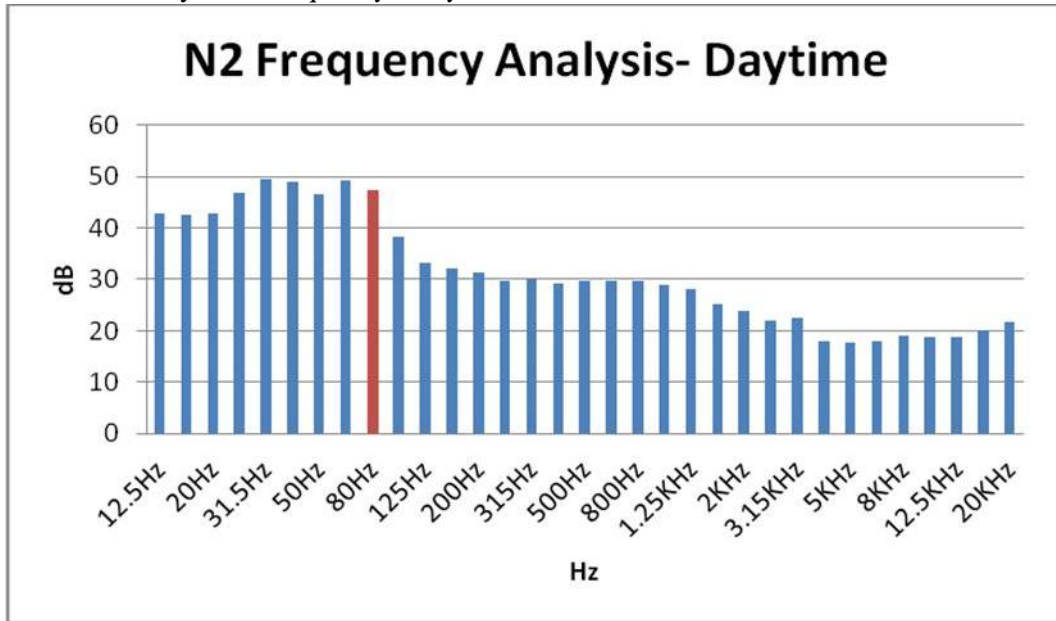


Figure 4 N2 Night Time Frequency Analysis

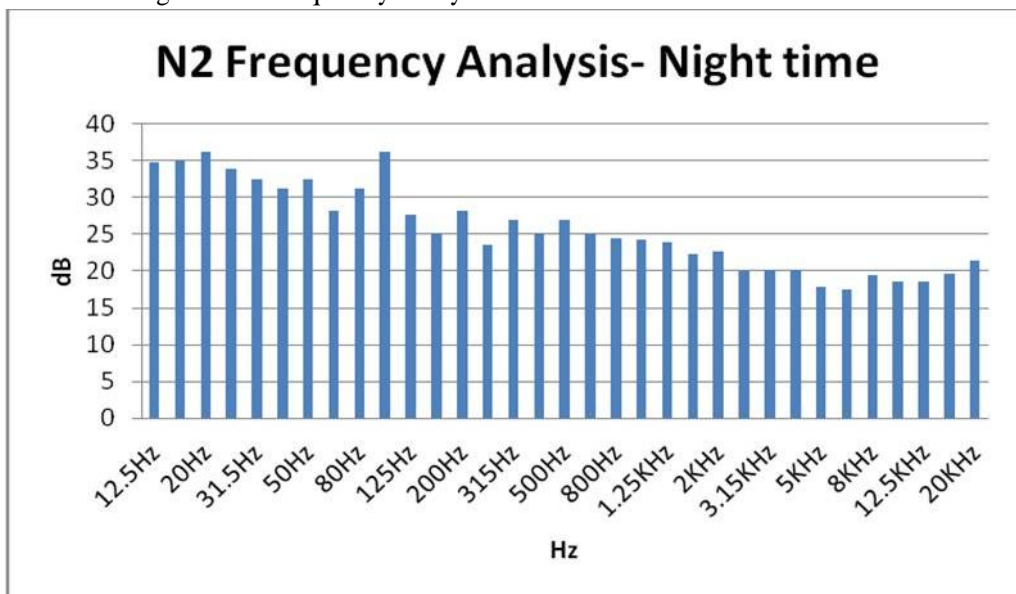


Figure 5 N3 Day Time Frequency Analysis

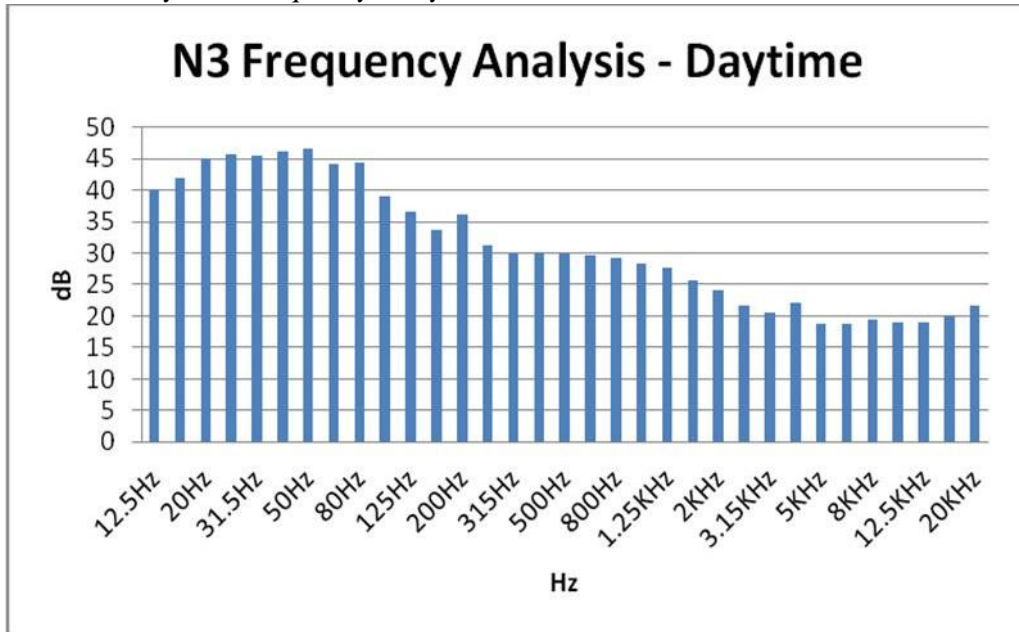


Figure 6 N3 Night Time Frequency Analysis

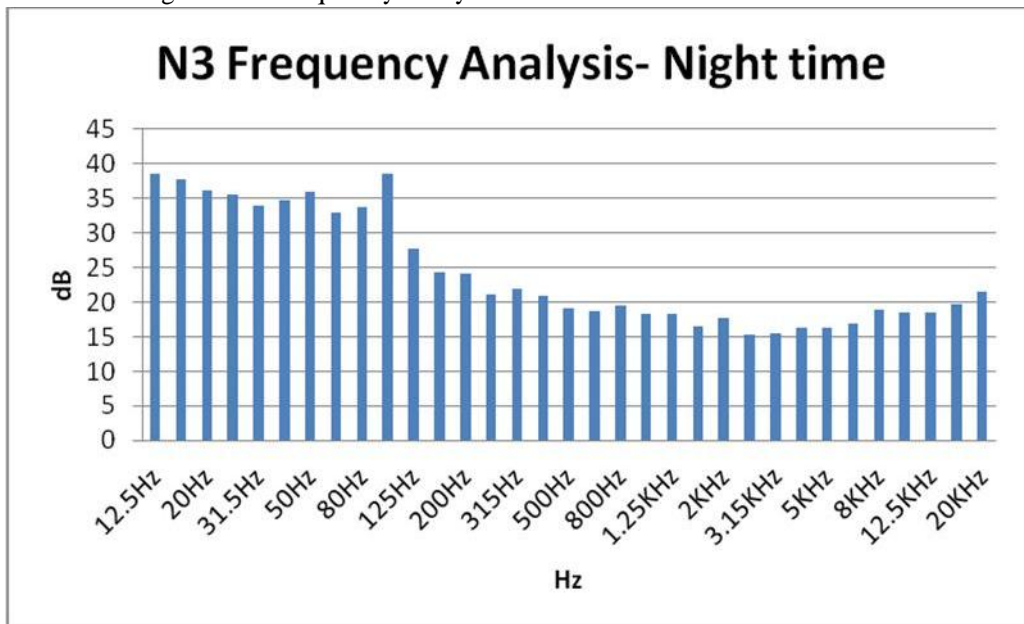


Figure 7 N4 Daytime Frequency Analysis

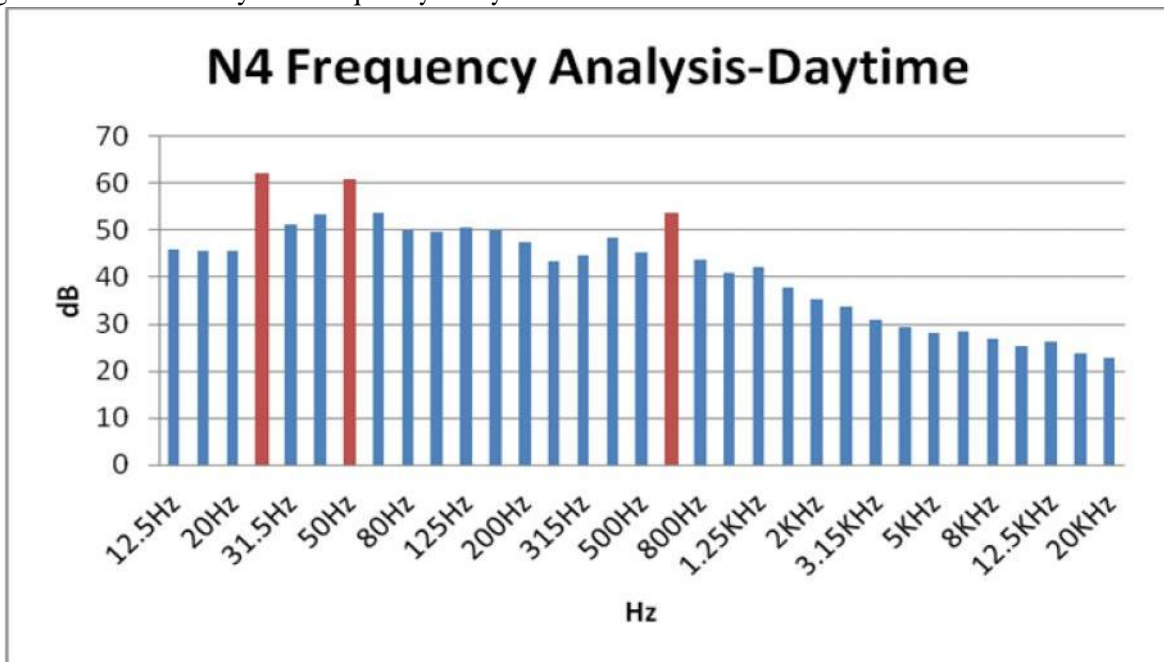
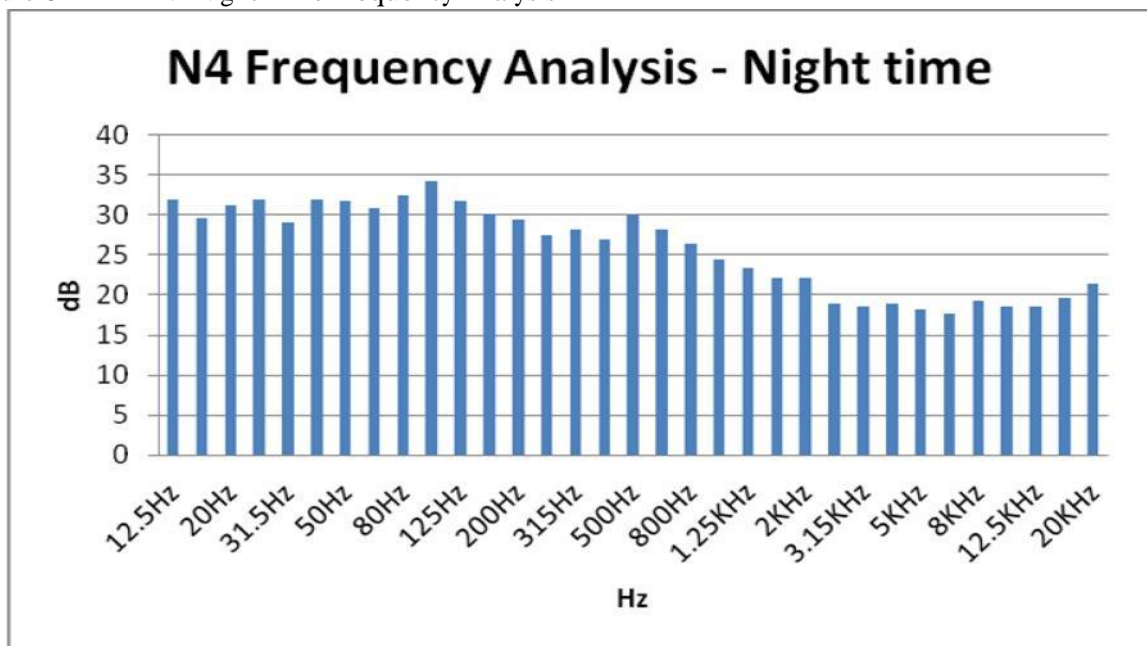


Figure 8 N4 Night Time Frequency Analysis





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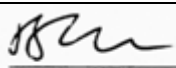
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APPENDIX E

Emissions Report



Report Title	Air Emissions Compliance Monitoring Emissions Report
Company address	Air Scientific Ltd., 32 DeGranville Court, Dublin road, Trim, Co. Meath
Stack Emissions Testing Report Commissioned by	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
Contact Person	Mr. Colm Hussey
EPA Licence Number	WL192-03
Licence Holder	Rilta Environmental Limited, A1
Stack Reference Number	A1
Dates of the Monitoring Campaign	07/08/2014
Job Reference Number	RIENTL1070814 / 2014331
Report Written By	Dr. John Casey
Report Approved by	Dr. Brian Sheridan
Stack Testing Team	Dr. John Casey
Report Date	15/08/2014
Report Type	Test Report Compliance Monitoring
Version	1
Signature of Approver	 Brian Sheridan Technical Manager

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Document No.: RIENTL1070814 / 2014331
Visit No: 1
Year: 2014
Office: Trim

IPPC Licence No.: WL192-03
Licence Holder: Rilta Environmental Limited, A1
Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue
Rev.No: 1

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1. Executive Summary

I. Monitoring Objectives

Overall Aim of the monitoring Campaign

The aim of the monitoring campaign was to demonstrate compliance with a set of emission limit values as specified in the site licence.

Special Requirements

There were no special requirements.

Target Parameters

T A Luft Organics
Total Organic Carbon
Stack Gas Temperature
Volume (m ³ .h ⁻¹)

Emission Limit Values

Emission Limit Values / Mass Emissions Limit Values	mg.m ⁻³	kg.h ⁻¹
T A Luft Organics Class I	20	-
Total Organic Carbon	-	1
Stack Gas Temperature	-	-
Volume (m ³ .h ⁻¹)	5,292	-

Reference Conditions

Reference Conditions	Value
Oxygen Reference %	No Oxygen Ref
Temperature °C	273.15
Total Pressure kPa	101.3
Moisture %	Yes

Executive Summary

Overall Results

Parameter	Concentration	Result	MU +/-	Limit	Compliant	Mass Emission	Result	Limit
	Units					Units		
T A Luft Organics	mg.m ⁻³	<0.52	0.11	20	Yes	kg.h ⁻¹	-	-
Total Organic Carbon	mg.m ⁻³	<0.44	0.11	-	Yes	kg.h ⁻¹	0.001	1
Stack Gas Temperature	K	292.15	-	-	N/A	-	-	-
Stack Gas Velocity	m.s ⁻¹	6.25	-	-	N/A	-	-	-
Volumetric Flow Rate	m ³ .h ⁻¹	2572	-	5,292	Yes	-	-	-

Accreditation details

Air Scientific Limited	INAB319T
External Analytical Laboratory	UKAS0605
Other	-

Executive Summary

Monitoring Dates & Times

Parameter	Run	Location ID	Sampling Dates	Sampling Time On	Sampling Time Off	Duration (mins.)
T A Luft Organics	Run 1	A1	07/08/2014	08:55:00	09:30:00	00:35:00
	Run 2					
	Run 3					

Executive Summary

Process details

Parameter	
Process status	Normal
Capacity (per/hour) (if applicable)	N/a
Continuous or Batch Process	Batch
Feedstock	Process Air
Abatement System	Yes
Abatement Systems Running Status	Normal
Fuel	N/A
Plume Appearance	No
Other information	None

Executive Summary

Monitoring, Equipment & Analytical Methods

	Monitoring				Analysis	
Parameter	Standard	Technical Procedure	Accredited Testing	Testing Lab	Analytical Technique	Analysis Lab
T A Luft Organics	EN13649:2002	SOP 2019	No	AirSci	Thermal Desorption	RPS
Stack Gas Temperature	EN16911:2013	SOP 2005	Yes	AirSci	Thermocouple	AirSci
Stack Gas Velocity	EN16911:2013	SOP 2005	Yes	AirSci	Pitot tubes	AirSci

List of Equipment

ID	Item of Equipment	Manufacturer	Serial No.
ASLTM12EQ505	SKC Aircheck Sampler	SKC	826085
ASLTM12EQ508	DryCal DC Lite Primary Flow Metre	BIOS	7298
ASLTM12EQ517	Testo 400 Gas Pressure Vacuum and Flow	Testo	00828828/305
ASLTM13EQ501	Stanley 8m Measuring Tape	Stanley	33-726
ASLTM13EQ505	S TYPE PITOT TUBE	Tecora	1347
ASLTM14EQ503	SKC Aircheck Sampler	SKC	A116456
ASLTM14EQ504	SKC Aircheck Sampler	SKC	A116184
ASLTM14EQ512	GemRed Electronic Level 0 to 180 Degrees	GemRed	8088

Sampling Deviations

Parameter	Deviation
Standard ID	EN16911 - in accordance with MID 6911-1
Standard ID	-
Standard ID	-
Standard ID	-

Reference Documents

Risk Assessment (RA)	SOP1011
Site Review (SR)	SOP1015
Site Specific Protocol (SSP)	SOP1015

Executive Summary

Suitability of sampling location

General Information	Value
Permanent/Temporary	Temporary
Inside/ Outside	Inside

Platform Details		
Irish EPA Technical Guidance Note AG1 / BS EN 15259 Platform Requirements	Value	Comment
Sufficient Working area to manipulate probe and measuring instruments	N/A	Cherry picker
Platform has 2 handrails (approx. 0.5m & 1.0 m high)	N/A	-
Platform has vertical base boards (approx. 0.25 m high)	N/A	-
Platform has chains / self closing gates at top of ladders	N/A	-
There are no obstructions present which hamper insertion of sampling equipment	N/A	-
Safe Access Available	N/A	-
Easy Access Available	N/A	-

Sampling Location / Platform Improvement Recommendations
None

BSEN 15259 Homogeneity Test Requirements
1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack
E.g. Select Option 1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack 2: Test results were obtained from previous Homogeneity test carried out by ASL 3: Test results were obtained from previous Homogeneity test carried out by Alternative contractor 4: Other: Enter Description

Executive Summary

Stack diagram



APPENDICES

II. *Appendix I Monitoring Personnel & Equipment*

Stack Emissions Monitoring Personnel

Team Leader	Name	John Casey
	Qualifications	PhD. (Eng.), MSc. (Agr.), B. Agr. Sc.
	System approval	Air Scientific Limited Approved
		-

III. Appendix II Stack Details & flow characteristics

Preliminary stack survey calculations

General Stack Details		
Stack details	Units	Value
Date of survey		07/08/2014
Time of survey		08:10
Type		Circular
Stack Diameter / Depth, D	m	0.40
Stack Width, W	m	-
Average Stack Gas Temp., Ta	C	19
Average Static Pressure, P static	kPa	0.001
Average Barometric Pressure, Pb	kPa	100.3
Type of Pitot		S
Are Water Droplets Present ?		No
Average Pitot Tube Calibration Coeff, Cp		0.85
Negative flow		No
Highly homogeneous flow stream/gas velocity		Yes

Sample Port Size	mm	20
Initial Pitot Leak Check	Pa	88
Final Pitot Leak Check	Pa	89
Orientation of Duct		Vertical
Pitot Tube Cp		0.998
Number of Lines Available		2
Number of Lines Used		2

Document No.: RIENTL1070814 / 2014331
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Year: 2014
Office: Trim

IPPC Licence No.: WL192-03
Licence Holder: Rilta Environmental Limited, A1
Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
Rev.No: 1

Sampling Line A						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.06	33	-	6.3	-	<15
3	0.12	35	-	6.5	-	<15
4	0.28	31	-	6.1	-	<15
5	0.34	30	-	6.0	-	<15
6	0.38	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	32.25	-	6.25	-	<15
Min	-	30	-	6.03	-	<15
Max	-	35	-	6.52	-	<15

Document No.: RIENTL1070814 / 2014331
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 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A1
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Sampling Line B						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.06	31	-	6.1	-	<15
3	0.12	35	-	6.5	-	<15
4	0.28	33	-	6.3	-	<15
5	0.34	30	-	6.0	-	<15
6	0.38	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	32.25	-	6.25	-	<15
Min	-	30	-	6.03	-	<15
Max	-	35	-	6.52	-	<15

Document No.: RIENTL1070814 / 2014331
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Component	Conc. ppm	Conc. Dry % v/v	Conc. Wet % v/v	Molar Mass
Carbon Dioxide CO ₂	-	0.04	-	44.01
Oxygen O ₂	-	20.9	-	32
Nitrogen N ₂	-	79	-	28.1
Moisture (H ₂ O)	-	-	1.8	18.02
Reference Conditions				
	Units	Numbers		
Temperature	°C	273.15		
Total Pressure	kPa	101.3		
Moisture	%	-		
Oxygen (Dry)	%	No Oxygen Ref		

Stack Gas Composition & Molecular Weights								
Component	Molar Mass M	Density Kg/m³ p	Conc. Dry % v/v	Dry Volume Fraction r	Dry Conc. kg/m³ pi	Conc. wet % v/v	Wet Volume Fraction r	Wet Conc. kg/m³ pi
Carbon Dioxide CO ₂	44.01	1.96	0.04	0.0004	0.00	0.04	0.00	0.00
Oxygen O ₂	32	1.43	20.9	0.209	0.30	20.52	0.21	0.29
Nitrogen N ₂	28.1	1.25	79	0.79	0.99	77.58	0.78	0.97
Moisture (H ₂ O)	18.02	0.80	-	-	-	1.8	0.02	0.01
	-	-	-	-	-	-	-	-
where $p=M/22.41$	-	-	-	-	-	-	-	-
$p_i = r \times p$	-	-	-	-	-	-	-	-

Calculation of Stack Gas Densities		
Determinand	Units	Result
Dry Density (STP), P STD	kg.m ⁻³	1.290
Wet Density (STP), P STW	kg.m ⁻³	1.281
Dry Density (Actual), P Actual	kg.m ⁻³	1.194
Average wet Density (Actual), P ActualW	kg.m ⁻³	1.186
Where		
P STD = sum of component concentrations, kg/m ³ (excluding water vapour)	-	-
$P_{STW} = (P_{STD} + p_{i \text{ of } H_2O}) / (1 + (p_{i \text{ of } H_2O} / 0.8036))$	-	-
$P_{actual} = P_{STD} \times (T_{STP} / (P_{STP})) \times (P_a / T_a)$	-	-
$P_{actual \ W} \text{ (at each sampling point)} = P_{STW} \times (T_s / P_s) \times (P_a / T_a)$	-	-

Sampling Plane Validation Criteria	Value	Units	Requirement	Compliance	Method
Lowest Differential Pressure	30	Pa	>5 Pa	Yes	EN16911:2013
Lowest Gas Velocity	6.03	m/s	-	N/A	-
Highest Gas Velocity	6.52	m/s	-	N/A	-
Ratio of Above	1.08	:1	<3:1	Yes	EN16911:2013
Mean Velocity	6.25	m/s	-	N/A	-
Angle of flow with regard to duct axis	<15	degrees	< 15	Yes	EN16911:2013
No local negative flow	No	-	-	Yes	-
Homogeneous flow stream/gas velocity	Yes	-	-	Yes	-

Calculation of stack Gas Velocity, V	
Velocity at Traverse Point, $V = K_{cp} \cdot \sqrt{(2 \cdot DP) / \text{Density}}$	-
Where	
K_{pt} = Pitot tube calibration coefficient	0.85
Compressibility correction factor, assumed at a constant 0.998	0.998

Gas Volumetric Flowrate	Units	Result
Gas Volumetric Flow Rate (Actual)	$m^3 \cdot h^{-1}$	2829
Gas Volumetric Flow Rate (STP, Wet)	$m^3 \cdot h^{-1}$	2619
Gas Volumetric Flowrate (STP, Dry)	$m^3 \cdot h^{-1}$	2572
Gas Volumetric Flowrate REF to Oxygen	$m^3 \cdot h^{-1}$	-

IV. Appendix 3 Individual parameter sampling details and results

Total Volatile Organic Carbon (Tube) Sampling details

Sampling Details	Run 1	
Stack ID	A1	
	Tube	
Leak Check Results		
Prior to test:	0.0001	l/min
Post Test:	0.0001	l/min
Sample Volume Flow Rate:	0.2922	l/min
Standard Requirement:	<2	%
Test Result:	0.034223	%
Test Status	Pass	
Calibration Details		
Pump Number:	ASLTM12EQ505	
Calibration Unit:	ASLTM12EQ508	
Calibration Rate Before Test:	0.2922	l/min
Calibration Rate After Test:	0.2922	l/min
Average sample Volume:	0.2922	l/min
Sample Test Time:	35	Min.
Pump Gas Temperature:	18	°C
Pump Sample Pressure:	101.3	kPa
Actual Sample Volume:	0.01023	m ³
Normalised Gas Volume:	0.00959	m ³

Total Volatile Organic Carbon (Tube) Quality Assurance

Site Name	-	-
Stack ID	A1	-
Date	07/08/2014	Run 1
Start time	-	08:55:00
Finish Time	-	09:30:00
	Units	Run 1
Leak test results		
Mean Sampling Rate	l/min	0.2922
Pre-sampling leak rate	l/min	0.0001
Post-sampling leak rate	l/min	0.0001
Leak rate	l/min	0.03422313
Acceptable leak rate (<2%)	Y/N	Y
Filtration		
Filter Material	-	N/A
Filter Size	mm	N/A
Max. Filter Temp	degrees	N/A
Absorbers Type	Glass/PTFE/ Other	Charcoal Tubes
Blank sample	-	4828601455
Blank sample ID	mg/m ³	< 10
Blank result	<10% ELV (Y/N)	Y
Acceptable Blank	-	-

Total Volatile Organic Carbon (Tube) Results and Measurement Uncertainty

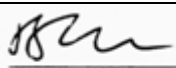
Sampling Details		Run 1
Stack ID	A1	
Date	-	
Start time	08:55:00	
Finish Time	09:30:00	
Results		
Laboratory Result	< 5	µg
Sample Volume	0.009594	m ³
Conversation factor for Carbon	0.84	
Emissions Concentration	0.4429	mg.m ⁻³ as C
Mass Emission	-	kg.h ⁻¹

Parameter	Units	Run 1
Combined Uncertainty	mg.m ⁻³	0.05
Expanded uncertainty as percentage of measured value	% of measured value	21.10
Expanded uncertainty in units of measurement	mg.m ⁻³	0.11
Expanded uncertainty as percentage of limit value	% Of ELV	0.55

Title:	Determination of Speciated Organic Compounds			
Method:	EN 13649			
Client:	Rilta Environmental Ltd			
Log Sheet Complete by:	Brian Sheridan			
Test Date:	07/08/2014			
Laboratory Used:	UKAS0605			
Certificate Numbers:	WK14-5268			
Stack Reference:	A1			
Leak Check Results				
Prior to test:	0.0001	l/min		
Post Test:	0.0001	l/min		
Sample Volume Flow Rate:	0.2922	l/min		
Standard Requirement:	<2	%		
Test Result:	0.034223135	%		
Test Status	Pass			
Calibration Details				
Pump Number:	ASLTM12EQ505			
Calibration Unit:	ASLTM12EQ508			

Calibration Rate Before Test:	0.2922	l/min		
Calibration Rate After Test:	0.2922	l/min		
Average sample Volume:	0.2922	l/min		
Sample Test Time:	35	minutes		
Pump Gas Temperature:	18	°C		
Pump Sample Pressure:	101.3	kPa		
Actual Sample Volume:	0.01023	m ³		
Normalised Gas Volume:	0.00959	Nm ³		
Tube Details				
Tube Type:	Charcoal Tubes			
Tube Identification Number:	4828601453			
Blank Identification Number:	4828601455			
Test Details				
Adsorption Tube Temperature:	18	°C		
Max Temperature Allowable:	40	°C		
Stack Flow Rates				
Diameter:	0.40	m		
Average Velocity:	6.25	m/s		
Average Temperature:	19	°C		
Average Pressure:	100.3	kPa		
Actual Flow Rate:	2829	m ³ /Hr		
Normalised Flow Rate:	2572	Nm ³ /Hr		
Speciated Organic Results				
Class I	µg/tube	mg/Nm3	kg/hr	
	0			
Class II				
	0			
Class III				
LLOD	< 5	0.52	0.0013	
Total Class I	0.00	mg/Nm3	0.000000	kg/Hr
Total Class II	0.00	mg/Nm3	0.000000	kg/Hr
Total Class III	0.52	mg/Nm3	0.001340	kg/Hr



Report Title	Air Emissions Compliance Monitoring Emissions Report
Company address	Air Scientific Ltd., 32 DeGranville Court, Dublin road, Trim, Co. Meath
Stack Emissions Testing Report Commissioned by	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
Contact Person	Mr. Colm Hussey
EPA Licence Number	WL192-03
Licence Holder	Rilta Environmental Limited, A1
Stack Reference Number	A1
Dates of the Monitoring Campaign	06/11/2014
Job Reference Number	RIENTL1061114 / 2014499
Report Written By	Dr. John Casey
Report Approved by	Dr. Brian Sheridan
Stack Testing Team	Dr. John Casey
Report Date	27/11/2014
Report Type	Test Report Compliance Monitoring
Version	1
Signature of Approver	 Brian Sheridan Technical Manager

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Overall Aim of the monitoring Campaign

The aim of the monitoring campaign was to demonstrate compliance with a set of emission limit values as specified in the site licence.

Special Requirements

There were no special requirements.

Target Parameters

T A Luft Organics
Stack Gas Temperature
Volume (m ³ .h ⁻¹)

Emission Limit Values

Emission Limit Values / Mass Emissions Limit Values	mg.m ⁻³	kg.h ⁻¹
T A Luft Organics	20	1
Stack Gas Temperature	-	-
Volume (m ³ .h ⁻¹)	5,292	-

Reference Conditions

Reference Conditions	Value
Oxygen Reference %	No Oxygen Ref
Temperature °C	273.15
Total Pressure kPa	101.3
Moisture %	Yes

Executive Summary

Overall Results

Parameter	Concentration	Result	MU +/-	Limit	Compliant	Mass Emission	Result	Limit
	Units					Units		
T A Luft Organics	mg.m ⁻³	LLOD	0.06	20	Yes	kg.h ⁻¹	<0.001	0.1
Total Organic Carbon	mg.m ⁻³	<0.40	0.06	--	Yes	kg.h ⁻¹	<0.001	1
Stack Gas Temperature	K	293.15	-	-	N/A	-	-	
Stack Gas Velocity	m.s ⁻¹	6.18	-	-	N/A	-	-	
Volumetric Flow Rate	m ³ .h ⁻¹	2522	-	5,292	Yes	-	-	

Accreditation details

Air Scientific Limited	INAB319T
External Analytical Laboratory	UKAS0605
Other	-

Executive Summary

Monitoring Dates & Times

Parameter	Run	Location ID	Sampling Dates	Sampling Time On	Sampling Time Off	Duration (mins.)
T A Luft Organics	Run 1	A1	06/11/2014	08:05:00	08:35:00	00:30:00
	Run 2					
	Run 3					

Executive Summary

Process details

Parameter	
Process status	Normal
Capacity (per/hour) (if applicable)	N/a
Continuous or Batch Process	Batch
Feedstock	Process Air
Abatement System	Yes
Abatement Systems Running Status	Normal
Fuel	N/A
Plume Appearance	No
Other information	None

Executive Summary

Monitoring, Equipment & Analytical Methods

	Monitoring				Analysis	
Parameter	Standard	Technical Procedure	Accredited Testing	Testing Lab	Analytical Technique	Analysis Lab
T A Luft Organics	EN13649:2002	SOP 2019	No	AirSci	Thermal Desorption	RPS
Stack Gas Temperature	EN16911:2013	SOP 2005	Yes	AirSci	Thermocouple	AirSci
Stack Gas Velocity	EN16911:2013	SOP 2005	Yes	AirSci	Pitot tubes	AirSci

List of Equipment

ID	Item of Equipment	Manufacturer	Serial No.
ASLTM12EQ503	SKC Aircheck Sampler	SKC	826925
ASLTM12EQ508	DryCal DC Lite Primary Flow Metre	BIOS	7298
ASLTM12EQ517	Testo 400 Gas Pressure Vacuum and Flow	Testo	00828828/305
ASLTM13EQ501	Stanley 8m Measuring Tape	Stanley	33-726
ASLTM13EQ502	6" Vernier Caliper	MEDID	N/A
ASLTM13EQ505	S TYPE PITOT TUBE	Tecora	1347
ASLTM14EQ512	GemRed Electronic Level 0 to 180 Degrees	GemRed	8088

Sampling Deviations

Parameter	Deviation
Standard ID	EN16911 - in accordance with MID 6911-1
Standard ID	-
Standard ID	-
Standard ID	-

Reference Documents

Risk Assessment (RA)	SOP1011
Site Review (SR)	SOP1015
Site Specific Protocol (SSP)	SOP1015

Executive Summary

Suitability of sampling location

General Information	Value
Permanent/Temporary	Temporary
Inside/ Outside	Inside

Platform Details		
Irish EPA Technical Guidance Note AG1 / BS EN 15259 Platform Requirements	Value	Comment
Sufficient Working area to manipulate probe and measuring instruments	N/A	Cherry picker
Platform has 2 handrails (approx. 0.5m & 1.0 m high)	N/A	-
Platform has vertical base boards (approx. 0.25 m high)	N/A	-
Platform has chains / self closing gates at top of ladders	N/A	-
There are no obstructions present which hamper insertion of sampling equipment	N/A	-
Safe Access Available	N/A	-
Easy Access Available	N/A	-

Sampling Location / Platform Improvement Recommendations
Install platform & ports in accordance with AG1

BSEN 15259 Homogeneity Test Requirements
1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack
E.g. Select Option 1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack 2: Test results were obtained from previous Homogeneity test carried out by ASL 3: Test results were obtained from previous Homogeneity test carried out by Alternative contractor 4: Other: Enter Description

Executive Summary

Stack diagram



APPENDICES

II. *Appendix I Monitoring Personnel & Equipment*

Stack Emissions Monitoring Personnel

Team Leader	Name	John Casey
	Qualifications	PhD. (Eng.), MSc. (Agr.), B. Agr. Sc.
	System approval	Air Scientific Limited Approved
		-

III. Appendix II Stack Details & flow characteristics

Preliminary stack survey calculations

General Stack Details		
Stack details	Units	Value
Date of survey		06/11/2014
Time of survey		08:00
Type		Circular
Stack Diameter / Depth, D	m	0.40
Stack Width, W	m	-
Average Stack Gas Temp., Ta	C	20
Average Static Pressure, P static	kPa	0.001
Average Barometric Pressure, Pb	kPa	99.8
Type of Pitot		S
Are Water Droplets Present ?		No
Average Pitot Tube Calibration Coeff, Cp		0.85
Negative flow		No
Highly homogeneous flow stream/gas velocity		Yes

Sample Port Size	mm	20
Initial Pitot Leak Check	Pa	120
Final Pitot Leak Check	Pa	123
Orientation of Duct		Vertical
Pitot Tube Cp		0.998
Number of Lines Available		2
Number of Lines Used		2

Document No.: RIENTL1061114 / 2014499
 Visit No: 2
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A1
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Sampling Line A						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.06	32	-	6.3	-	<15
3	0.12	30	-	6.1	-	<15
4	0.28	31	-	6.2	-	<15
5	0.34	33	-	6.4	-	<15
6	0.38	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	31.50	-	6.21	-	<15
Min	-	30	-	6.06	-	<15
Max	-	33	-	6.35	-	<15

Sampling Line B						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.06	30	-	6.1	-	<15
3	0.12	32	-	6.3	-	<15
4	0.28	32	-	6.3	-	<15
5	0.34	30	-	6.1	-	<15
6	0.38	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	31.00	-	6.16	-	<15
Min	-	30	-	6.06	-	<15
Max	-	32	-	6.26	-	<15

Document No.: RIENTL1061114 / 2014499
 Visit No: 2
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A1
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Component	Conc. ppm	Conc. Dry % v/v	Conc. Wet % v/v	Molar Mass
Carbon Dioxide CO ₂	-	0.04	-	44.01
Oxygen O ₂	-	20.9	-	32
Nitrogen N ₂	-	79	-	28.1
Moisture (H ₂ O)	-	-	1.8	18.02
Reference Conditions				
	Units	Numbers		
Temperature	°C	273.15		
Total Pressure	kPa	101.3		
Moisture	%	-		
Oxygen (Dry)	%	No Oxygen Ref		

Stack Gas Composition & Molecular Weights								
Component	Molar Mass M	Density Kg/m ³ p	Conc. Dry % v/v	Dry Volume Fraction r	Dry Conc. kg/m ³ pi	Conc. wet % v/v	Wet Volume Fraction r	Wet Conc. kg/m ³ pi
Carbon Dioxide CO ₂	44.01	1.96	0.04	0.0004	0.00	0.04	0.00	0.00
Oxygen O ₂	32	1.43	20.9	0.209	0.30	20.52	0.21	0.29
Nitrogen N ₂	28.1	1.25	79	0.79	0.99	77.58	0.78	0.97
Moisture (H ₂ O)	18.02	0.80	-	-	-	1.8	0.02	0.01
	-	-	-	-	-	-	-	-
where p=M/22.41	-	-	-	-	-	-	-	-
pi = r x p	-	-	-	-	-	-	-	-

Calculation of Stack Gas Densities		
Determinand	Units	Result
Dry Density (STP), P STD	kg.m ⁻³	1.290
Wet Density (STP), P STW	kg.m ⁻³	1.281
Dry Density (Actual), P Actual	kg.m ⁻³	1.184
Average wet Density (Actual), P ActualW	kg.m ⁻³	1.176
Where		
P STD = sum of component concentrations, kg/m ³ (excluding water vapour)	-	-
$P_{STW} = (P_{STD} + p_{i \text{ of } H_2O}) / (1 + (p_{i \text{ of } H_2O} / 0.8036))$	-	-
$P_{actual} = P_{STD} \times (T_{STP} / (P_{STP})) \times (P_a / T_a)$	-	-
$P_{actual \ W} \text{ (at each sampling point)} = P_{STW} \times (T_s / P_s) \times (P_a / T_a)$	-	-

Sampling Plane Validation Criteria	Value	Units	Requirement	Compliance	Method
Lowest Differential Pressure	30	Pa	>5 Pa	Yes	EN16911:2013
Lowest Gas Velocity	6.06	m/s	-	N/A	-
Highest Gas Velocity	6.35	m/s	-	N/A	-
Ratio of Above	1.05	:1	<3:1	Yes	EN16911:2013
Mean Velocity	6.18	m/s	-	N/A	-
Angle of flow with regard to duct axis	<15	degrees	< 15	Yes	EN16911:2013
No local negative flow	No	-	-	Yes	-
Homogeneous flow stream/gas velocity	Yes	-	-	Yes	-

Calculation of stack Gas Velocity, V	
Velocity at Traverse Point, $V = K_{cp} \cdot \sqrt{(2 \cdot DP) / \text{Density}}$	-
Where	
K_{pt} = Pitot tube calibration coefficient	0.85
Compressibility correction factor, assumed at a constant 0.998	0.998

Gas Volumetric Flowrate	Units	Result
Gas Volumetric Flow Rate (Actual)	$m^3 \cdot h^{-1}$	2797
Gas Volumetric Flow Rate (STP, Wet)	$m^3 \cdot h^{-1}$	2568
Gas Volumetric Flowrate (STP, Dry)	$m^3 \cdot h^{-1}$	2522
Gas Volumetric Flowrate REF to Oxygen	$m^3 \cdot h^{-1}$	-

IV. Appendix III Individual parameter sampling details and results

Total Volatile Organic Carbon (Tube) Sampling details

Sampling Details	Run 1	
Stack ID	A1	
	Tube	
Leak Check Results		
Prior to test:	0.0001	l/min
Post Test:	0.0001	l/min
Sample Volume Flow Rate:	0.4512	l/min
Standard Requirement:	<2	%
Test Result:	0.022163	%
Test Status	Pass	
Calibration Details		
Pump Number:	ASLTM12EQ503	
Calibration Unit:	ASLTM12EQ508	
Calibration Rate Before Test:	0.4512	l/min
Calibration Rate After Test:	0.4512	l/min
Average sample Volume:	0.4512	l/min
Sample Test Time:	30	Min.
Pump Gas Temperature:	15	°C
Pump Sample Pressure:	99.8	kPa
Actual Sample Volume:	0.01354	m ³
Normalised Gas Volume:	0.01264	m ³

Total Volatile Organic Carbon (Tube) Quality Assurance

Site Name	-	-
Stack ID	A1	-
Date	06/11/2014	Run 1
Start time	-	08:05:00
Finish Time	-	08:35:00
	Units	Run 1
Leak test results		
Mean Sampling Rate	l/min	0.4512
Pre-sampling leak rate	l/min	0.0001
Post-sampling leak rate	l/min	0.0001
Leak rate	l/min	0.02216312
Acceptable leak rate (<2%)	Y/N	Y
Filtration		
Filter Material	-	N/A
Filter Size	mm	N/A
Max. Filter Temp	degrees	N/A
Absorbers Type	Glass/PTFE/ Other	Charcoal Tubes
Blank sample	-	
Blank sample ID	mg/m ³	5105207321
Blank result	<10% ELV (Y/N)	8.5
Acceptable Blank	-	Y

Total Volatile Organic Carbon (Tube) Results and Measurement Uncertainty

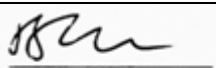
Sampling Details		Run 1
Stack ID	A1	
Date	06/11/2014	
Start time	08:05:00	
Finish Time	08:35:00	
Results		
Laboratory Result	<5	µg
Sample Volume	0.012641	m ³
Emissions Concentration	0.395538	mg.m ⁻³
Mass Emission	-	kg.h ⁻¹

Parameter	Units	Run 1
Combined Uncertainty	mg.m ⁻³	0.03
Expanded uncertainty as percentage of measured value	% of measured value	16.16
Expanded uncertainty in units of measurement	mg.m ⁻³	0.06
Expanded uncertainty as percentage of limit value	% Of ELV	0.32

Title:	Determination of Speciated Organic Compounds			
Method:	EN 13649			
Client:	Rilta Environmental Ltd			
Log Sheet Complete by:	John Casey			
Test Date:	06/11/2014			
Laboratory Used:	UKAS0605			
Certificate Numbers:	WK14-7338			
Stack Reference:	A1			
Leak Check Results				
Prior to test:	0.0001	l/min		
Post Test:	0.0001	l/min		
Sample Volume Flow Rate:	0.4512	l/min		
Standard Requirement:	<2	%		
Test Result:	0.022163121	%		
Test Status	Pass			
Calibration Details				
Pump Number:	ASLTM12EQ503			
Calibration Unit:	ASLTM12EQ508			
Calibration Rate Before Test:	0.4512	l/min		

Calibration Rate After Test:	0.4512	l/min		
Average sample Volume:	0.4512	l/min		
Sample Test Time:	30	minutes		
Pump Gas Temperature:	15	°C		
Pump Sample Pressure:	99.8	kPa		
Actual Sample Volume:	0.01354	m ³		
Normalised Gas Volume:	0.01264	Nm ³		
Tube Details				
Tube Type:	Charcoal Tubes			
Tube Identification Number:	5113306489			
Blank Identification Number:	5105207321			
Test Details				
Adsorption Tube Temperature:	15	°C		
Max Temperature Allowable:	40	°C		
Stack Flow Rates				
Diameter:	0.40	m		
Average Velocity:	6.18	m/s		
Average Temperature:	20	°C		
Average Pressure:	99.8	kPa		
Actual Flow Rate:	2797	m ³ /Hr		
Normalised Flow Rate:	2522	Nm ³ /Hr		
Speciated Organic Results				
Class I	µg/tube	mg/Nm3	kg/hr	
	0			
Class II				
	0			
Class III				
LLOD	<5	0.40	0.0010	
Total Class I	0.00	mg/Nm3	0.000000	kg/Hr
Total Class II	0.00	mg/Nm3	0.000000	kg/Hr
Total Class III	<0.40	mg/Nm3	<0.000997	kg/Hr



Report Title	Air Emissions Compliance Monitoring Emissions Report
Company address	Air Scientific Ltd., 32 DeGranville Court, Dublin road, Trim, Co. Meath
Stack Emissions Testing Report Commissioned by	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
Contact Person	Mr. Colm Hussey
EPA Licence Number	WL192-03
Licence Holder	Rilta Environmental Limited, A2
Stack Reference Number	A2
Dates of the Monitoring Campaign	07/08/2014
Job Reference Number	RIENTL1070814 / 2014331
Report Written By	Dr. John Casey
Report Approved by	Dr. Brian Sheridan
Stack Testing Team	Dr. John Casey
Report Date	15/08/2014
Report Type	Test Report Compliance Monitoring
Version	1
Signature of Approver	 Brian Sheridan Technical Manager

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Document No.: RIENTL1070814 / 2014331
Visit No: 1
Year: 2014
Office: Trim

IPPC Licence No.: WL192-03
Licence Holder: Rilta Environmental Limited, A2
Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue
Rev.No: 1

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1. Executive Summary

I. Monitoring Objectives

Overall Aim of the monitoring Campaign

The aim of the monitoring campaign was to demonstrate compliance with a set of emission limit values as specified in the site licence.

Special Requirements

There were no special requirements.

Target Parameters

T A Luft Organics
Total Organic Carbon
Stack Gas Temperature
Volume (m ³ .h ⁻¹)

Emission Limit Values

Emission Limit Values / Mass Emissions Limit Values	mg.m ⁻³	kg.h ⁻¹
T A Luft Organics Class I	20	-
Total Organic Carbon	-	0.1
Stack Gas Temperature	-	-
Volume (m ³ .h ⁻¹)	5,292	-

Reference Conditions

Reference Conditions	Value
Oxygen Reference %	No Oxygen Ref
Temperature °C	273.15
Total Pressure kPa	101.3
Moisture %	Yes

Executive Summary

Overall Results

Parameter	Concentration	Result	MU +/-	Limit	Compliant	Mass Emission	Result	Limit
	Units					Units		
T A Luft Organics	mg.m ⁻³	LLOD	19.08	20	Yes	kg.h ⁻¹	-	-
Total Organic Carbon	mg.m ⁻³	86.57	19.08	-	No	kg.h ⁻¹	0.5397	0.1
Stack Gas Temperature	K	292.15	-	-	N/A	-	-	-
Stack Gas Velocity	m.s ⁻¹	4.80	-	-	N/A	-	-	-
Volumetric Flow Rate	m ³ .h ⁻¹	6,235	-	5,292	No	-	-	-

Accreditation details

Air Scientific Limited	INAB319T
External Analytical Laboratory	UKAS0605
Other	-

Executive Summary

Monitoring Dates & Times

Parameter	Run	Location ID	Sampling Dates	Sampling Time On	Sampling Time Off	Duration (mins.)
T A Luft Organics	Run 1	A2	07/08/2014	08:45:00	09:23:00	00:38:00
	Run 2					
	Run 3					

Executive Summary

Process details

Parameter	
Process status	Normal
Capacity (per/hour) (if applicable)	N/a
Continuous or Batch Process	Batch
Feedstock	Process Air
Abatement System	Yes
Abatement Systems Running Status	Normal
Fuel	N/A
Plume Appearance	No
Other information	None

Executive Summary

Monitoring, Equipment & Analytical Methods

	Monitoring				Analysis	
Parameter	Standard	Technical Procedure	Accredited Testing	Testing Lab	Analytical Technique	Analysis Lab
T A Luft Organics	EN13649:2002	SOP 2019	No	AirSci	Thermal Desorption	RPS
Stack Gas Temperature	EN16911:2013	SOP 2005	Yes	AirSci	Thermocouple	AirSci
Stack Gas Velocity	EN16911:2013	SOP 2005	Yes	AirSci	Pitot tubes	AirSci

List of Equipment

ID	Item of Equipment	Manufacturer	Serial No.
ASLTM12EQ505	SKC Aircheck Sampler	SKC	826085
ASLTM12EQ508	DryCal DC Lite Primary Flow Metre	BIOS	7298
ASLTM12EQ517	Testo 400 Gas Pressure Vacuum and Flow	Testo	00828828/305
ASLTM13EQ501	Stanley 8m Measuring Tape	Stanley	33-726
ASLTM13EQ505	S TYPE PITOT TUBE	Tecora	1347
ASLTM14EQ503	SKC Aircheck Sampler	SKC	A116456
ASLTM14EQ504	SKC Aircheck Sampler	SKC	A116184
ASLTM14EQ512	GemRed Electronic Level 0 to 180 Degrees	GemRed	8088

Sampling Deviations

Parameter	Deviation
Standard ID	EN16911 - in accordance with MID 6911-1
Standard ID	-
Standard ID	-
Standard ID	-

Reference Documents

Risk Assessment (RA)	SOP1011
Site Review (SR)	SOP1015
Site Specific Protocol (SSP)	SOP1015

Executive Summary

Suitability of sampling location

General Information	Value
Permanent/Temporary	Temporary
Inside/ Outside	Inside

Platform Details		
Irish EPA Technical Guidance Note AG1 / BS EN 15259 Platform Requirements	Value	Comment
Sufficient Working area to manipulate probe and measuring instruments	N/A	Cherry picker
Platform has 2 handrails (approx. 0.5m & 1.0 m high)	N/A	-
Platform has vertical base boards (approx. 0.25 m high)	N/A	-
Platform has chains / self closing gates at top of ladders	N/A	-
There are no obstructions present which hamper insertion of sampling equipment	N/A	-
Safe Access Available	N/A	-
Easy Access Available	N/A	-

Sampling Location / Platform Improvement Recommendations
None

BSEN 15259 Homogeneity Test Requirements
1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack
E.g. Select Option 1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack 2: Test results were obtained from previous Homogeneity test carried out by ASL 3: Test results were obtained from previous Homogeneity test carried out by Alternative contractor 4: Other: Enter Description

Executive Summary

Stack diagram



APPENDICES

II. Appendix I Monitoring Personnel & Equipment

Stack Emissions Monitoring Personnel

Team Leader	Name	John Casey
	Qualifications	PhD. (Eng.), MSc. (Agr.), B. Agr. Sc.
	System approval	Air Scientific Limited Approved
		-

III. Appendix II Stack Details & flow characteristics

Preliminary stack survey calculations

General Stack Details		
Stack details	Units	Value
Date of survey		07/08/2014
Time of survey		08:15
Type		Circular
Stack Diameter / Depth, D	m	0.71
Stack Width, W	m	-
Average Stack Gas Temp., Ta	C	19
Average Static Pressure, P static	kPa	0.002
Average Barometric Pressure, Pb	kPa	100.3
Type of Pitot		S
Are Water Droplets Present ?		No
Average Pitot Tube Calibration Coeff, Cp		0.85
Negative flow		No
Highly homogeneous flow stream/gas velocity		Yes

Sample Port Size	mm	20
Initial Pitot Leak Check	Pa	80
Final Pitot Leak Check	Pa	81
Orientation of Duct		Vertical
Pitot Tube Cp		0.998
Number of Lines Available		2
Number of Lines Used		2

Document No.: RIENTL1070814 / 2014331
 Visit No: 1
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A2
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Sampling Line A						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.03	-	-	-	-	-
2	0.1	19	-	4.8	-	<15
3	0.21	20	-	4.9	-	<15
4	0.49	18	-	4.7	-	<15
5	0.6	19	-	4.8	-	<15
6	0.67	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	19.00	-	4.80	-	<15
Min	-	18	-	4.67	-	<15
Max	-	20	-	4.92	-	<15

Sampling Line B						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.03	-	-	-	-	-
2	0.1	17	-	4.5	-	<15
3	0.21	18	-	4.7	-	<15
4	0.49	21	-	5.0	-	<15
5	0.6	20	-	4.9	-	<15
6	0.67	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	19.00	-	4.79	-	<15
Min	-	17	-	4.54	-	<15
Max	-	21	-	5.05	-	<15

Document No.: RIENTL1070814 / 2014331
 Visit No: 1
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A2
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Component	Conc. ppm	Conc. Dry % v/v	Conc. Wet % v/v	Molar Mass
Carbon Dioxide CO ₂	-	0.04	-	44.01
Oxygen O ₂	-	20.9	-	32
Nitrogen N ₂	-	79	-	28.1
Moisture (H ₂ O)	-	-	1.5	18.02
Reference Conditions				
	Units	Numbers		
Temperature	°C	273.15		
Total Pressure	kPa	101.3		
Moisture	%	-		
Oxygen (Dry)	%	No Oxygen Ref		

Stack Gas Composition & Molecular Weights								
Component	Molar Mass M	Density Kg/m ³ p	Conc. Dry % v/v	Dry Volume Fraction r	Dry Conc. kg/m ³ pi	Conc. wet % v/v	Wet Volume Fraction r	Wet Conc. kg/m ³ pi
Carbon Dioxide CO ₂	44.01	1.96	0.04	0.0004	0.00	0.04	0.00	0.00
Oxygen O ₂	32	1.43	20.9	0.209	0.30	20.59	0.21	0.29
Nitrogen N ₂	28.1	1.25	79	0.79	0.99	77.82	0.78	0.98
Moisture (H ₂ O)	18.02	0.80	-	-	-	1.5	0.02	0.01
	-	-	-	-	-	-	-	-
where p=M/22.41	-	-	-	-	-	-	-	-
pi = r x p	-	-	-	-	-	-	-	-

Calculation of Stack Gas Densities		
Determinand	Units	Result
Dry Density (STP), P STD	kg.m ⁻³	1.290
Wet Density (STP), P STW	kg.m ⁻³	1.283
Dry Density (Actual), P Actual	kg.m ⁻³	1.194
Average wet Density (Actual), P ActualW	kg.m ⁻³	1.187
Where		
P STD = sum of component concentrations, kg/m ³ (excluding water vapour)	-	-
$P_{STW} = (P_{STD} + p_{i \text{ of H}_2\text{O}}) / (1 + (p_{i \text{ of H}_2\text{O}} / 0.8036))$	-	-
$P_{\text{actual}} = P_{STD} \times (T_{STP} / (P_{STP})) \times (P_a / T_a)$	-	-
$P_{\text{actual W (at each sampling point)}} = P_{STW} \times (T_s / P_s) \times (P_a / T_a)$	-	-

Sampling Plane Validation Criteria	Value	Units	Requirement	Compliance	Method
Lowest Differential Pressure	17	Pa	>5 Pa	Yes	EN16911:2013
Lowest Gas Velocity	4.54	m/s	-	N/A	-
Highest Gas Velocity	5.05	m/s	-	N/A	-
Ratio of Above	1.11	:1	<3:1	Yes	EN16911:2013
Mean Velocity	4.80	m/s	-	N/A	-
Angle of flow with regard to duct axis	<15	degrees	< 15	Yes	EN16911:2013
No local negative flow	No	-	-	Yes	-
Homogeneous flow stream/gas velocity	Yes	-	-	Yes	-

Calculation of stack Gas Velocity, V	
Velocity at Traverse Point, $V = K_{cp} \cdot \sqrt{(2 \cdot DP) / \text{Density}}$	-
Where	
K_{pt} = Pitot tube calibration coefficient	0.85
Compressibility correction factor, assumed at a constant 0.998	0.998

Gas Volumetric Flowrate	Units	Result
Gas Volumetric Flow Rate (Actual)	$m^3 \cdot h^{-1}$	6837
Gas Volumetric Flow Rate (STP, Wet)	$m^3 \cdot h^{-1}$	6330
Gas Volumetric Flowrate (STP, Dry)	$m^3 \cdot h^{-1}$	6235
Gas Volumetric Flowrate REF to Oxygen	$m^3 \cdot h^{-1}$	-

IV. Appendix 3 Individual parameter sampling details and results

Total Volatile Organic Carbon (Tube) Sampling details

Sampling Details	Run 1	
Stack ID	A2	
	Tube	
Leak Check Results		
Prior to test:	0.0001	l/min
Post Test:	0.0001	l/min
Sample Volume Flow Rate:	0.3258	l/min
Standard Requirement:	<2	%
Test Result:	0.030694	%
Test Status	Pass	
Calibration Details		
Pump Number:	ASLTM14EQ503	
Calibration Unit:	ASLTM12EQ508	
Calibration Rate Before Test:	0.3258	l/min
Calibration Rate After Test:	0.3258	l/min
Average sample Volume:	0.3258	l/min
Sample Test Time:	38	Min.
Pump Gas Temperature:	35	°C
Pump Sample Pressure:	101.3	kPa
Actual Sample Volume:	0.01238	m ³
Normalised Gas Volume:	0.01097	m ³

Total Volatile Organic Carbon (Tube) Quality Assurance

Site Name	-	-
Stack ID	A2	-
Date	07/08/2014	Run 1
Start time	-	08:45:00
Finish Time	-	09:23:00
	Units	Run 1
Leak test results		
Mean Sampling Rate	l/min	0.3258
Pre-sampling leak rate	l/min	0.0001
Post-sampling leak rate	l/min	0.0001
Leak rate	l/min	0.03069368
Acceptable leak rate (<2%)	Y/N	Y
Filtration		
Filter Material	-	N/A
Filter Size	mm	N/A
Max. Filter Temp	degrees	N/A
Absorbers Type	Glass/PTFE/ Other	Charcoal Tubes
Blank sample	-	
Blank sample ID	mg/m ³	4828601455
Blank result	<10% ELV (Y/N)	10
Acceptable Blank	-	Y

Total Volatile Organic Carbon (Tube) Results and Measurement Uncertainty

Sampling Details		Run 1
Stack ID	A2	
Date	-	
Start time	08:45:00	
Finish Time	09:23:00	
Results		
Laboratory Result	1131	µg
Sample Volume	0.010974	m ³
Conversation Factor for Carbon	0.84	
Emissions Concentration	86.57	mg.m ⁻³ as C
Mass Emission	-	kg.h ⁻¹

Parameter	Units	Run 1
Combined Uncertainty	mg.m ⁻³	9.54
Expanded uncertainty as percentage of measured value	% of measured value	18.51
Expanded uncertainty in units of measurement	mg.m ⁻³	19.08
Expanded uncertainty as percentage of limit value	% Of ELV	12.72

Title:	Determination of Speciated Organic Compounds			
Method:	EN 13649			
Client:	Rilta Environmental Ltd			
Log Sheet Complete by:	Brian Sheridan			
Test Date:	07/08/2014			
Laboratory Used:	UKAS0605			
Certificate Numbers:	WK14-5268			
Stack Reference:	A2			
Leak Check Results				
Prior to test:	0.0001	l/min		
Post Test:	0.0001	l/min		
Sample Volume Flow Rate:	0.3258	l/min		
Standard Requirement:	<2	%		
Test Result:	0.030693677	%		
Test Status	Pass			
Calibration Details				
Pump Number:	ASLTM14EQ503			
Calibration Unit:	ASLTM12EQ508			

Calibration Rate Before Test:	0.3258	l/min		
Calibration Rate After Test:	0.3258	l/min		
Average sample Volume:	0.3258	l/min		
Sample Test Time:	38	minutes		
Pump Gas Temperature:	35	°C		
Pump Sample Pressure:	101.3	kPa		
Actual Sample Volume:	0.01238	m ³		
Normalised Gas Volume:	0.01097	Nm ³		
Tube Details				
Tube Type:	Charcoal Tubes			
Tube Identification Number:	4828601454			
Blank Identification Number:	4828601455			
Test Details				
Adsorption Tube Temperature:	35	°C		
Max Temperature Allowable:	40	°C		
Stack Flow Rates				
Diameter:	0.71	m		
Average Velocity:	4.80	m/s		
Average Temperature:	19	°C		
Average Pressure:	100.3	kPa		
Actual Flow Rate:	6837	m ³ /Hr		
Normalised Flow Rate:	6235	Nm ³ /Hr		
Speciated Organic Results				
Class I	µg/tube	mg/Nm3	kg/hr	
	0			
Class II				
M+P Xylene	697	63.52	0.3960	
Ethyl Benzene	201	18.32	0.1142	
O-Xylene	206	18.77	0.1170	
Class III				
1,2,4-trimethylbenzene	13	1.18	0.0074	
Decane	14	1.28	0.0080	
Total Class I	0.00	mg/Nm3	0.000000	kg/Hr
Total Class II	100.61	mg/Nm3	0.627253	kg/Hr
Total Class III	2.46	mg/Nm3	0.015340	kg/Hr



Report Title	Air Emissions Compliance Monitoring Emissions Report
Company address	Air Scientific Ltd., 32 DeGranville Court, Dublin road, Trim, Co. Meath
Stack Emissions Testing Report Commissioned by	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
Contact Person	Mr. Colm Hussey
EPA Licence Number	WL192-03
Licence Holder	Rilta Environmental Limited, A2
Stack Reference Number	A2
Dates of the Monitoring Campaign	06/11/2014
Job Reference Number	REINTL1061114 / 2014499
Report Written By	Dr. John Casey
Report Approved by	Dr. Brian Sheridan
Stack Testing Team	Dr. John Casey
Report Date	27/11/2014
Report Type	Test Report Compliance Monitoring
Version	1
Signature of Approver	 Brian Sheridan Technical Manager

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Licence Holder: Rilta Environmental Limited, A2
Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue
Rev.No: 1

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1. Executive Summary

I. Monitoring Objectives

Overall Aim of the monitoring Campaign

The aim of the monitoring campaign was to demonstrate compliance with a set of emission limit values as specified in the site licence.

Special Requirements

There were no special requirements.

Target Parameters

T A Luft Organics
Stack Gas Temperature
Volume (m ³ .h ⁻¹)

Emission Limit Values

Emission Limit Values / Mass Emissions Limit Values	mg.m ⁻³	kg.h ⁻¹
T A Luft Organics	20	0.1
Stack Gas Temperature	-	-
Volume (m ³ .h ⁻¹)	5,292	-

Reference Conditions

Reference Conditions	Value
Oxygen Reference %	No Oxygen Ref
Temperature °C	273.15
Total Pressure kPa	101.3
Moisture %	Yes

Executive Summary

Overall Results

Parameter	Concentration	Result	MU +/-	Limit	Compliant	Mass Emission	Result	Limit
	Units					Units		
T A Luft Organics	mg.m ⁻³	LLOD	0.26	20	Yes	-	-	-
Total Organic Carbon	mg.m ⁻³	1.35	0.26	--	Yes	kg.h ⁻¹	0.008	0.1
Stack Gas Temperature	K	293.15	-	-	N/A	-	-	-
Stack Gas Velocity	m.s ⁻¹	4.87	-	-	N/A	-	-	-
Volumetric Flow Rate	m ³ .h ⁻¹	6271	-	5,292	No	-	-	-

Accreditation details

Air Scientific Limited	INAB319T
External Analytical Laboratory	UKAS0605
Other	-

Executive Summary

Monitoring Dates & Times

Parameter	Run	Location ID	Sampling Dates	Sampling Time On	Sampling Time Off	Duration (mins.)
T A Luft Organics	Run 1	A2	06/11/2014	08:13:00	08:48:00	00:35:00
	Run 2	-	-	-	-	-
	Run 3	-	-	-	-	-

Executive Summary

Process details

Parameter	
Process status	Normal
Capacity (per/hour) (if applicable)	N/a
Continuous or Batch Process	Batch
Feedstock	Process Air
Abatement System	Yes
Abatement Systems Running Status	Normal
Fuel	N/A
Plume Appearance	No
Other information	None

Executive Summary

Monitoring, Equipment & Analytical Methods

	Monitoring				Analysis	
Parameter	Standard	Technical Procedure	Accredited Testing	Testing Lab	Analytical Technique	Analysis Lab
T A Luft Organics	EN13649:2002	SOP 2019	No	AirSci	Thermal Desorption	RPS
Stack Gas Temperature	EN16911:2013	SOP 2005	Yes	AirSci	Thermocouple	AirSci
Stack Gas Velocity	EN16911:2013	SOP 2005	Yes	AirSci	Pitot tubes	AirSci

List of Equipment

ID	Item of Equipment	Manufacturer	Serial No.
ASLTM12EQ504	SKC Aircheck Sampler	SKC	826914
ASLTM12EQ508	DryCal DC Lite Primary Flow Metre	BIOS	7298
ASLTM12EQ517	Testo 400 Gas Pressure Vacuum and Flow	Testo	00828828/305
ASLTM13EQ501	Stanley 8m Measuring Tape	Stanley	33-726
ASLTM13EQ502	6" Vernier Caliper	MEDID	N/A
ASLTM13EQ505	S TYPE PITOT TUBE	Tecora	1347
ASLTM14EQ512	GemRed Electronic Level 0 to 180 Degrees	GemRed	8088

Sampling Deviations

Parameter	Deviation
Standard ID	EN16911 - in accordance with MID 6911-1
Standard ID	-
Standard ID	-
Standard ID	-

Reference Documents

Risk Assessment (RA)	SOP1011
Site Review (SR)	SOP1015
Site Specific Protocol (SSP)	SOP1015

Executive Summary

Suitability of sampling location

General Information	Value
Permanent/Temporary	Temporary
Inside/ Outside	Inside

Platform Details		
Irish EPA Technical Guidance Note AG1 / BS EN 15259 Platform Requirements	Value	Comment
Sufficient Working area to manipulate probe and measuring instruments	N/A	Cherry picker
Platform has 2 handrails (approx. 0.5m & 1.0 m high)	N/A	-
Platform has vertical base boards (approx. 0.25 m high)	N/A	-
Platform has chains / self closing gates at top of ladders	N/A	-
There are no obstructions present which hamper insertion of sampling equipment	N/A	-
Safe Access Available	N/A	-
Easy Access Available	N/A	-

Sampling Location / Platform Improvement Recommendations
Install ports and platform in accordance with AG1

BSEN 15259 Homogeneity Test Requirements
1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack
E.g. Select Option 1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack 2: Test results were obtained from previous Homogeneity test carried out by ASL 3: Test results were obtained from previous Homogeneity test carried out by Alternative contractor 4: Other: Enter Description

Executive Summary

Stack diagram



2.

APPENDICES

II. Appendix I Monitoring Personnel & Equipment

Stack Emissions Monitoring Personnel

Team Leader	Name	John Casey
	Qualifications	PhD. (Eng.), MSc. (Agr.), B. Agr. Sc.
	System approval	Air Scientific Limited Approved
		-

III. Appendix II Stack Details & flow characteristics

Preliminary stack survey calculations

General Stack Details		
Stack details	Units	Value
Date of survey		06/11/2014
Time of survey		08:10
Type		Circular
Stack Diameter / Depth, D	m	0.71
Stack Width, W	m	-
Average Stack Gas Temp., Ta	C	20
Average Static Pressure, P static	kPa	0.001
Average Barometric Pressure, Pb	kPa	99.8
Type of Pitot		S
Are Water Droplets Present ?		No
Average Pitot Tube Calibration Coeff, Cp		0.85
Negative flow		No
Highly homogeneous flow stream/gas velocity		Yes

Sample Port Size	mm	20
Initial Pitot Leak Check	Pa	125
Final Pitot Leak Check	Pa	124
Orientation of Duct		Vertical
Pitot Tube Cp		0.998
Number of Lines Available		2
Number of Lines Used		2

Document No.: REINTL1061114 / 2014499
 Visit No: 2
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A2
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Sampling Line A						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.03	-	-	-	-	-
2	0.1	20	-	4.9	-	<15
3	0.21	19	-	4.8	-	<15
4	0.49	18	-	4.7	-	<15
5	0.6	19	-	4.8	-	<15
6	0.67	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	19.00	-	4.82	-	<15
Min	-	18	-	4.69	-	<15
Max	-	20	-	4.94	-	<15

Sampling Line B						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.03	-	-	-	-	-
2	0.1	19	-	4.8	-	<15
3	0.21	20	-	4.9	-	<15
4	0.49	19	-	4.8	-	<15
5	0.6	21	-	5.1	-	<15
6	0.67	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	19.75	-	4.91	-	<15
Min	-	19	-	4.82	-	<15
Max	-	21	-	5.07	-	<15

Document No.: REINTL1061114 / 2014499
 Visit No: 2
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A2
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Component	Conc. ppm	Conc. Dry % v/v	Conc. Wet % v/v	Molar Mass
Carbon Dioxide CO ₂	-	0.04	-	44.01
Oxygen O ₂	-	20.9	-	32
Nitrogen N ₂	-	79	-	28.1
Moisture (H ₂ O)	-	-	1.5	18.02
Reference Conditions				
	Units	Numbers		
Temperature	°C	273.15		
Total Pressure	kPa	101.3		
Moisture	%	-		
Oxygen (Dry)	%	No Oxygen Ref		

Stack Gas Composition & Molecular Weights								
Component	Molar Mass M	Density Kg/m³ p	Conc. Dry % v/v	Dry Volume Fraction r	Dry Conc. kg/m³ pi	Conc. wet % v/v	Wet Volume Fraction r	Wet Conc.kg/m³ pi
Carbon Dioxide CO ₂	44.01	1.96	0.04	0.0004	0.00	0.04	0.00	0.00
Oxygen O ₂	32	1.43	20.9	0.209	0.30	20.59	0.21	0.29
Nitrogen N ₂	28.1	1.25	79	0.79	0.99	77.82	0.78	0.98
Moisture (H ₂ O)	18.02	0.80	-	-	-	1.5	0.02	0.01
	-	-	-	-	-	-	-	-
where p=M/22.41	-	-	-	-	-	-	-	-
pi = r x p	-	-	-	-	-	-	-	-

Calculation of Stack Gas Densities		
Determinand	Units	Result
Dry Density (STP), P STD	kg.m ⁻³	1.290
Wet Density (STP), P STW	kg.m ⁻³	1.283
Dry Density (Actual), P Actual	kg.m ⁻³	1.184
Average wet Density (Actual), P ActualW	kg.m ⁻³	1.177
Where		
P STD = sum of component concentrations, kg/m ³ (excluding water vapour)	-	-
$P_{STW} = (P_{STD} + p_{i \text{ of } H_2O}) / (1 + (p_{i \text{ of } H_2O} / 0.8036))$	-	-
$P_{actual} = P_{STD} \times (T_{STP} / (P_{STP})) \times (P_a / T_a)$	-	-
$P_{actual \ W} \text{ (at each sampling point)} = P_{STW} \times (T_s / P_s) \times (P_a / T_a)$	-	-

Sampling Plane Validation Criteria	Value	Units	Requirement	Compliance	Method
Lowest Differential Pressure	18	Pa	>5 Pa	Yes	EN16911:2013
Lowest Gas Velocity	4.69	m/s	-	N/A	-
Highest Gas Velocity	5.07	m/s	-	N/A	-
Ratio of Above	1.08	:1	<3:1	Yes	EN16911:2013
Mean Velocity	4.87	m/s	-	N/A	-
Angle of flow with regard to duct axis	<15	degrees	< 15	Yes	EN16911:2013
No local negative flow	No	-	-	Yes	-
Homogeneous flow stream/gas velocity	Yes	-	-	Yes	-

Calculation of stack Gas Velocity, V	
Velocity at Traverse Point, $V = K_{cp} \cdot \sqrt{(2 \cdot DP) / \text{Density}}$	-
Where	
K_{pt} = Pitot tube calibration coefficient	0.85
Compressibility correction factor, assumed at a constant 0.998	0.998

Gas Volumetric Flowrate	Units	Result
Gas Volumetric Flow Rate (Actual)	$m^3 \cdot h^{-1}$	6936
Gas Volumetric Flow Rate (STP, Wet)	$m^3 \cdot h^{-1}$	6367
Gas Volumetric Flowrate (STP, Dry)	$m^3 \cdot h^{-1}$	6271
Gas Volumetric Flowrate REF to Oxygen	$m^3 \cdot h^{-1}$	-

IV. Appendix 3 Individual parameter sampling details and results

Total Volatile Organic Carbon (Tube) Sampling details

Sampling Details	Run 1	
Stack ID	A2	
	Tube	
Leak Check Results		
Prior to test:	0.0001	l/min
Post Test:	0.0001	l/min
Sample Volume Flow Rate:	0.3243	l/min
Standard Requirement:	<2	%
Test Result:	0.030836	%
Test Status	Pass	
Calibration Details		
Pump Number:	ASLTM14EQ504	
Calibration Unit:	ASLTM12EQ508	
Calibration Rate Before Test:	0.3243	l/min
Calibration Rate After Test:	0.3243	l/min
Average sample Volume:	0.3243	l/min
Sample Test Time:	35	Min.
Pump Gas Temperature:	21	°C
Pump Sample Pressure:	99.8	kPa
Actual Sample Volume:	0.01135	m ³
Normalised Gas Volume:	0.01038	m ³

Total Volatile Organic Carbon (Tube) Quality Assurance

Site Name	-	-
Stack ID	A2	-
Date	06/11/2014	Run 1
Start time	-	08:13:00
Finish Time	-	08:48:00
	Units	Run 1
Leak test results		
Mean Sampling Rate	l/min	0.3243
Pre-sampling leak rate	l/min	0.0001
Post-sampling leak rate	l/min	0.0001
Leak rate	l/min	0.03083565
Acceptable leak rate (<2%)	Y/N	Y
Filtration		
Filter Material	-	N/A
Filter Size	mm	N/A
Max. Filter Temp	degrees	N/A
Absorbers Type	Glass/PTFE/ Other	Charcoal Tubes
Absorption Solution		
Blank sample	-	5105207321
Blank sample ID	mg/m ³	8.5
Blank result	<10% ELV (Y/N)	Y
Acceptable Blank	-	-

Total Volatile Organic Carbon (Tube) Results and Measurement Uncertainty

Sampling Details		Run 1
Stack ID	A2	
Date	-	
Start time	08:13:00	
Finish Time	08:48:00	
Results		
Laboratory Result	14	µg
Factor		-
Sample Volume	0.010384	m ³
Emissions Concentration	1.34	mg.m ⁻³
Mass Emission	-	kg.h ⁻¹

Parameter	Units	Run 1
Combined Uncertainty	mg.m ⁻³	0.13
Expanded uncertainty as percentage of measured value	% of measured value	19.54
Expanded uncertainty in units of measurement	mg.m ⁻³	0.26
Expanded uncertainty as percentage of limit value	% Of ELV	0.18

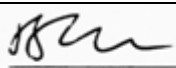
Title:	Determination of Speciated Organic Compounds			
Method:	EN 13649			
Client:	Rilta Environmental Ltd			
Log Sheet Complete by:	John Casey			
Test Date:	06/11/2014			
Laboratory Used:	UKAS0605			
Certificate Numbers:	WK14-7338			
Stack Reference:	A2			
Leak Check Results				
Prior to test:	0.0001	l/min		
Post Test:	0.0001	l/min		
Sample Volume Flow Rate:	0.3243	l/min		
Standard Requirement:	<2	%		
Test Result:	0.030835646	%		
Test Status	Pass			

Calibration Details				
Pump Number:	ASLTM14EQ504			
Calibration Unit:	ASLTM12EQ508			
Calibration Rate Before Test:	0.3243	l/min		
Calibration Rate After Test:	0.3243	l/min		
Average sample Volume:	0.3243	l/min		
Sample Test Time:	35	minutes		
Pump Gas Temperature:	21	°C		
Pump Sample Pressure:	99.8	kPa		
Actual Sample Volume:	0.01135	m ³		
Normalised Gas Volume:	0.01038	Nm ³		
Tube Details				
Tube Type:	Charcoal Tubes			
Tube Identification Number:	5113306494			
Blank Identification Number:	5105207321			
Test Details				
Adsorption Tube Temperature:	21	°C		
Max Temperature Allowable:	40	°C		
Stack Flow Rates				
Diameter:	0.71	m		
Average Velocity:	4.87	m/s		
Average Temperature:	20	°C		
Average Pressure:	99.8	kPa		
Actual Flow Rate:	6936	m ³ /Hr		
Normalised Flow Rate:	6271	Nm ³ /Hr		
Speciated Organic Results				
Class I				
	µg/tube	mg/Nm3	kg/hr	
Limit of detection	0	0.00	0.0000	
Class II				
M+P Xylene	14	1.35	0.0085	
Limit of detection		0.00	0.0000	
Class III				
Limit of detection	0	0.00	0.0000	
Total Class I	0.00	mg/Nm3	0.000000	kg/Hr
Total Class II	1.35	mg/Nm3	0.008455	kg/Hr
Total Class III	0.00	mg/Nm3	0.000000	kg/Hr

Document No.: REINTL1061114 / 2014499
Visit No: 2
Year: 2014
Office: Trim

IPPC Licence No.: WL192-03
Licence Holder: Rilta Environmental Limited, A2
Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue
Rev.No: 1



Report Title	Air Emissions Compliance Monitoring Emissions Report
Company address	Air Scientific Ltd., 32 DeGranville Court, Dublin road, Trim, Co. Meath
Stack Emissions Testing Report Commissioned by	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
Contact Person	Mr. Colm Hussey
EPA Licence Number	WL192-03
Licence Holder	Rilta Environmental Limited, A3
Stack Reference Number	A3
Dates of the Monitoring Campaign	07/08/2014
Job Reference Number	RIENTL1070814 / 2014331
Report Written By	Dr. John Casey
Report Approved by	Dr. Brian Sheridan
Stack Testing Team	Dr. John Casey
Report Date	15/08/2014
Report Type	Test Report Compliance Monitoring
Version	1
Signature of Approver	 Brian Sheridan Technical Manager

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1. Executive Summary

I. Monitoring Objectives

Overall Aim of the monitoring Campaign

The aim of the monitoring campaign was to demonstrate compliance with a set of emission limit values as specified in the site licence.

Special Requirements

There were no special requirements.

Target Parameters

T A Luft Organics
Total Organic Carbon
Stack Gas Temperature
Volume (m ³ .h ⁻¹)

Emission Limit Values

Emission Limit Values / Mass Emissions Limit Values	mg.m ⁻³	kg.h ⁻¹
T A Luft Organics Class I	20	-
Total Organic Carbon	-	0.3
Stack Gas Temperature	-	-
Volume (m ³ .h ⁻¹)	2,520	-

Reference Conditions

Reference Conditions	Value
Oxygen Reference %	No Oxygen Ref
Temperature °C	273.15
Total Pressure kPa	101.3
Moisture %	Yes

Executive Summary

Overall Results

Parameter	Concentration	Result	MU +/-	Limit	Compliant	Mass Emission	Result	Limit
	Units					Units		
T A Luft Organics	mg.m ⁻³	LLOD	23.81	20	Yes	kg.h ⁻¹	-	-
Total Organic Carbon	mg.m ⁻³	111.49	23.81	-	Yes	kg.h ⁻¹	0.17	0.3
Stack Gas Temperature	K	311.15	-	-	N/A	-	-	-
Stack Gas Velocity	m.s ⁻¹	7.54	-	-	N/A	-	-	-
Volumetric Flow Rate	m ³ .h ⁻¹	1527	-	2,520	Yes	-	-	-

Accreditation details

Air Scientific Limited	INAB319T
External Analytical Laboratory	UKAS0605
Other	-

Executive Summary

Monitoring Dates & Times

Parameter	Run	Location ID	Sampling Dates	Sampling Time On	Sampling Time Off	Duration (mins.)
T A Luft Organics	Run 1	A3	07/08/2014	08:35:00	09:12:00	00:37:00
	Run 2					
	Run 3					

Executive Summary

Process details

Parameter	
Process status	Normal
Capacity (per/hour) (if applicable)	N/a
Continuous or Batch Process	Batch
Feedstock	Process Air
Abatement System	Yes
Abatement Systems Running Status	Normal
Fuel	N/A
Plume Appearance	No
Other information	None

Executive Summary

Monitoring, Equipment & Analytical Methods

	Monitoring				Analysis	
Parameter	Standard	Technical Procedure	Accredited Testing	Testing Lab	Analytical Technique	Analysis Lab
T A Luft Organics	EN13649:2002	SOP 2019	No	AirSci	Thermal Desorption	RPS
Stack Gas Temperature	EN16911:2013	SOP 2005	Yes	AirSci	Thermocouple	AirSci
Stack Gas Velocity	EN16911:2013	SOP 2005	Yes	AirSci	Pitot tubes	AirSci

List of Equipment

ID	Item of Equipment	Manufacturer	Serial No.
ASLTM12EQ505	SKC Aircheck Sampler	SKC	826085
ASLTM12EQ508	DryCal DC Lite Primary Flow Metre	BIOS	7298
ASLTM12EQ517	Testo 400 Gas Pressure Vacuum and Flow	Testo	00828828/305
ASLTM13EQ501	Stanley 8m Measuring Tape	Stanley	33-726
ASLTM13EQ505	S TYPE PITOT TUBE	Tecora	1347
ASLTM14EQ503	SKC Aircheck Sampler	SKC	A116456
ASLTM14EQ504	SKC Aircheck Sampler	SKC	A116184
ASLTM14EQ512	GemRed Electronic Level 0 to 180 Degrees	GemRed	8088

Sampling Deviations

Parameter	Deviation
Standard ID	EN16911 - in accordance with MID 6911-1
Standard ID	-
Standard ID	-
Standard ID	-

Reference Documents

Risk Assessment (RA)	SOP1011
Site Review (SR)	SOP1015
Site Specific Protocol (SSP)	SOP1015

Executive Summary

Suitability of sampling location

General Information	Value
Permanent/Temporary	Temporary
Inside/ Outside	Inside

Platform Details		
Irish EPA Technical Guidance Note AG1 / BS EN 15259 Platform Requirements	Value	Comment
Sufficient Working area to manipulate probe and measuring instruments	N/A	Cherry picker
Platform has 2 handrails (approx. 0.5m & 1.0 m high)	N/A	-
Platform has vertical base boards (approx. 0.25 m high)	N/A	-
Platform has chains / self closing gates at top of ladders	N/A	-
There are no obstructions present which hamper insertion of sampling equipment	N/A	-
Safe Access Available	N/A	-
Easy Access Available	N/A	-

Sampling Location / Platform Improvement Recommendations
None

BSEN 15259 Homogeneity Test Requirements
1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack
E.g. Select Option 1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack 2: Test results were obtained from previous Homogeneity test carried out by ASL 3: Test results were obtained from previous Homogeneity test carried out by Alternative contractor 4: Other: Enter Description

Executive Summary

Stack diagram



APPENDICES

II. Appendix I Monitoring Personnel & Equipment

Stack Emissions Monitoring Personnel

Team Leader	Name	John Casey
	Qualifications	PhD. (Eng.), MSc. (Agr.), B. Agr. Sc.
	System approval	Air Scientific Limited Approved
		-

III. Appendix II Stack Details & flow characteristics

Preliminary stack survey calculations

General Stack Details		
Stack details	Units	Value
Date of survey		07/08/2014
Time of survey		08:20
Type		Circular
Stack Diameter / Depth, D	m	0.29
Stack Width, W	m	-
Average Stack Gas Temp., Ta	C	38
Average Static Pressure, P static	kPa	0.003
Average Barometric Pressure, Pb	kPa	100.3
Type of Pitot		S
Are Water Droplets Present ?		No
Average Pitot Tube Calibration Coeff, Cp		0.85
Negative flow		No
Highly homogeneous flow stream/gas velocity		Yes

Sample Port Size	mm	20
Initial Pitot Leak Check	Pa	88
Final Pitot Leak Check	Pa	83
Orientation of Duct		Vertical
Pitot Tube Cp		0.998
Number of Lines Available		2
Number of Lines Used		2

Document No.: RIENTL1070814 / 2014331
 Visit No: 1
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A3
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Sampling Line A						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.07	45	-	7.6	-	<15
3	0.22	41	-	7.3	-	<15
4	0.27	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	43.00	-	7.46	-	<15
Min	-	41	-	7.28	-	<15
Max	-	45	-	7.63	-	<15

Sampling Line B						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.07	46	-	7.7	-	<15
3	0.22	44	-	7.5	-	<15
4	0.27	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	45.00	-	7.63	-	<15
Min	-	44	-	7.54	-	<15
Max	-	46	-	7.71	-	<15

Document No.: RIENTL1070814 / 2014331
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IPPC Licence No.: WL192-03
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 Rev.No: 1

Component	Conc. ppm	Conc. Dry % v/v	Conc. Wet % v/v	Molar Mass
Carbon Dioxide CO ₂	-	0.04	-	44.01
Oxygen O ₂	-	20.9	-	32
Nitrogen N ₂	-	79	-	28.1
Moisture (H ₂ O)	-	-	2.1	18.02
Reference Conditions				
	Units	Numbers		
Temperature	°C	273.15		
Total Pressure	kPa	101.3		
Moisture	%	-		
Oxygen (Dry)	%	No Oxygen Ref		

Stack Gas Composition & Molecular Weights								
Component	Molar Mass M	Density Kg/m³ p	Conc. Dry % v/v	Dry Volume Fraction r	Dry Conc. kg/m³ pi	Conc. wet % v/v	Wet Volume Fraction r	Wet Conc.kg/m³ pi
Carbon Dioxide CO ₂	44.01	1.96	0.04	0.0004	0.00	0.04	0.00	0.00
Oxygen O ₂	32	1.43	20.9	0.209	0.30	20.46	0.20	0.29
Nitrogen N ₂	28.1	1.25	79	0.79	0.99	77.34	0.77	0.97
Moisture (H ₂ O)	18.02	0.80	-	-	-	2.1	0.02	0.02
	-	-	-	-	-	-	-	-
where p=M/22.41	-	-	-	-	-	-	-	-
pi = r x p	-	-	-	-	-	-	-	-

Calculation of Stack Gas Densities		
Determinand	Units	Result
Dry Density (STP), P STD	kg.m ⁻³	1.290
Wet Density (STP), P STW	kg.m ⁻³	1.280
Dry Density (Actual), P Actual	kg.m ⁻³	1.121
Average wet Density (Actual), P ActualW	kg.m ⁻³	1.112
Where		
P STD = sum of component concentrations, kg/m ³ (excluding water vapour)	-	-
$P_{STW} = (P_{STD} + p_{i \text{ of } H_2O}) / (1 + (p_{i \text{ of } H_2O} / 0.8036))$	-	-
$P_{actual} = P_{STD} \times (T_{STP} / (P_{STP})) \times (P_a / T_a)$	-	-
$P_{actual \ W} \text{ (at each sampling point)} = P_{STW} \times (T_s / P_s) \times (P_a / T_a)$	-	-

Sampling Plane Validation Criteria	Value	Units	Requirement	Compliance	Method
Lowest Differential Pressure	41	Pa	>5 Pa	Yes	EN16911:2013
Lowest Gas Velocity	7.28	m/s	-	N/A	-
Highest Gas Velocity	7.71	m/s	-	N/A	-
Ratio of Above	1.06	:1	<3:1	Yes	EN16911:2013
Mean Velocity	7.54	m/s	-	N/A	-
Angle of flow with regard to duct axis	<15	degrees	< 15	Yes	EN16911:2013
No local negative flow	No	-	-	Yes	-
Homogeneous flow stream/gas velocity	Yes	-	-	Yes	-

Calculation of stack Gas Velocity, V	
Velocity at Traverse Point, $V = K_{cp} * \text{Sqrt}((2 * DP) / \text{Density})$	-
Where	
K_{pt} = Pitot tube calibration coefficient	0.85
Compressibility correction factor, assumed at a constant 0.998	0.998

Gas Volumetric Flowrate	Units	Result
Gas Volumetric Flow Rate (Actual)	$m^3 \cdot h^{-1}$	1794
Gas Volumetric Flow Rate (STP, Wet)	$m^3 \cdot h^{-1}$	1559
Gas Volumetric Flowrate (STP, Dry)	$m^3 \cdot h^{-1}$	1527
Gas Volumetric Flowrate REF to Oxygen	$m^3 \cdot h^{-1}$	-

IV. Appendix 3 Individual parameter sampling details and results

Total Volatile Organic Carbon (Tube) Sampling details

Sampling Details	Run 1	
Stack ID	A3	
	Tube	
Leak Check Results		
Prior to test:	0.0001	l/min
Post Test:	0.0001	l/min
Sample Volume Flow Rate:	0.3289	l/min
Standard Requirement:	<2	%
Test Result:	0.030404	%
Test Status	Pass	
Calibration Details		
Pump Number:	ASLTM12EQ504.	
Calibration Unit:	ASLTM12EQ508	
Calibration Rate Before Test:	0.3289	l/min
Calibration Rate After Test:	0.3289	l/min
Average sample Volume:	0.3289	l/min
Sample Test Time:	37	Min.
Pump Gas Temperature:	20	°C
Pump Sample Pressure:	101.3	kPa
Actual Sample Volume:	0.01217	m ³
Normalised Gas Volume:	0.01134	m ³

Total Volatile Organic Carbon (Tube) Quality Assurance

Site Name	-	-
Stack ID	A3	-
Date	07/08/2014	Run 1
Start time	-	08:35:00
Finish Time	-	09:12:00
	Units	Run 1
Leak test results		
Mean Sampling Rate	l/min	0.3289
Pre-sampling leak rate	l/min	0.0001
Post-sampling leak rate	l/min	0.0001
Leak rate	l/min	0.03040438
Acceptable leak rate (<2%)	Y/N	Y
Filtration		
Filter Material	-	N/A
Filter Size	mm	N/A
Max. Filter Temp	degrees	N/A
Absorbers Type	Glass/PTFE/ Other	Charcoal Tubes
Absorption Solution		
Blank sample	-	
Blank sample ID	mg/m ³	4828601455
Blank result	<10% ELV (Y/N)	<10
Acceptable Blank	-	Y

Total Volatile Organic Carbon (Tube) Results and Measurement Uncertainty

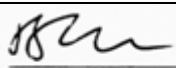
Sampling Details		Run 1
Stack ID	A3	
Date	-	
Start time	08:35:00	
Finish Time	09:12:00	
Results		
Laboratory Result	1505	µg
Sample Volume	0.011339	m ³
Conversation factor for Carbon	0.84	
Emissions Concentration	111.49	mg.m ⁻³ as C
Mass Emission	-	kg.h ⁻¹

Parameter	Units	Run 1
Combined Uncertainty	mg.m ⁻³	11.91
Expanded uncertainty as percentage of measured value	% of measured value	17.94
Expanded uncertainty in units of measurement	mg.m ⁻³	23.81
Expanded uncertainty as percentage of limit value	% Of ELV	15.87

Title:	Determination of Speciated Organic Compounds			
Method:	EN 13649			
Client:	Rilta Environmental Ltd			
Log Sheet Complete by:	Brian Sheridan			
Test Date:	07/08/2014			
Laboratory Used:	UKAS0605			
Certificate Numbers:	WK14-5268			
Stack Reference:	A3			
Leak Check Results				
Prior to test:	0.0001	l/min		
Post Test:	0.0001	l/min		
Sample Volume Flow Rate:	0.3289	l/min		
Standard Requirement:	<2	%		
Test Result:	0.030404378	%		
Test Status	Pass			
Calibration Details				
Pump Number:	ASLTM12EQ504.			
Calibration Unit:	ASLTM12EQ508			

Calibration Rate Before Test:	0.3289	l/min		
Calibration Rate After Test:	0.3289	l/min		
Average sample Volume:	0.3289	l/min		
Sample Test Time:	37	minutes		
Pump Gas Temperature:	20	°C		
Pump Sample Pressure:	101.3	kPa		
Actual Sample Volume:	0.01217	m ³		
Normalised Gas Volume:	0.01134	Nm ³		
Tube Details				
Tube Type:	Charcoal Tubes			
Tube Identification Number:	4828601450			
Blank Identification Number:	4828601455			
Test Details				
Adsorption Tube Temperature:	20	°C		
Max Temperature Allowable:	40	°C		
Stack Flow Rates				
Diameter:	0.29	m		
Average Velocity:	7.54	m/s		
Average Temperature:	38	°C		
Average Pressure:	100.3	kPa		
Actual Flow Rate:	1794	m ³ /Hr		
Normalised Flow Rate:	1527	Nm ³ /Hr		
Speciated Organic Results				
Class I	µg/tube	mg/Nm3	kg/hr	
	0			
Class II				
M+P Xylene	907	79.99	0.1221	
Ethyl Benzene	256	22.58	0.0345	
O-Xylene	295	26.02	0.0397	
Class III				
1,2,4-trimethylbenzene	23	2.03	0.0031	
Decane	24	2.12	0.0032	
Total Class I	0.00	mg/Nm3	0.000000	kg/Hr
Total Class II	128.59	mg/Nm3	0.196299	kg/Hr
Total Class III	4.15	mg/Nm3	0.006328	kg/Hr



Report Title	Air Emissions Compliance Monitoring Emissions Report
Company address	Air Scientific Ltd., 32 DeGranville Court, Dublin road, Trim, Co. Meath
Stack Emissions Testing Report Commissioned by	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
Contact Person	Mr. Colm Hussey
EPA Licence Number	WL192-03
Licence Holder	Rilta Environmental Limited, A3
Stack Reference Number	A3
Dates of the Monitoring Campaign	06/11/2014
Job Reference Number	RIENTL1061114 / 2014499
Report Written By	Dr. John Casey
Report Approved by	Dr. Brian Sheridan
Stack Testing Team	Dr. John Casey
Report Date	27/11/2014
Report Type	Test Report Compliance Monitoring
Version	1
Signature of Approver	 Brian Sheridan Technical Manager

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Document No.: RIENTL1061114 / 2014499
Visit No: 2
Year: 2014
Office: Trim

IPPC Licence No.: WL192-03
Licence Holder: Rilta Environmental Limited, A3
Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue
Rev.No: 1

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1. Executive Summary

I. Monitoring Objectives

Overall Aim of the monitoring Campaign

The aim of the monitoring campaign was to demonstrate compliance with a set of emission limit values as specified in the site licence.

Special Requirements

There were no special requirements.

Target Parameters

T A Luft Organics
Stack Gas Temperature
Volume (m ³ .h ⁻¹)

Emission Limit Values

Emission Limit Values / Mass Emissions Limit Values	mg.m ⁻³	kg.h ⁻¹
T A Luft Organics	20	0.3
Stack Gas Temperature	-	-
Volume (m ³ .h ⁻¹)	2,520	-

Reference Conditions

Reference Conditions	Value
Oxygen Reference %	No Oxygen Ref
Temperature °C	273.15
Total Pressure kPa	101.3
Moisture %	Yes

Executive Summary

Overall Results

Parameter	Concentration	Result	MU +/-	Limit	Compliant	Mass Emission	Result	Limit
	Units					Units		
T A Luft Organics	mg.m ⁻³	LLOD	0.53	20	Yes	--	--	--
Total Organics Carbon	mg.m ⁻³	3.17	0.53		Yes	kg.h ⁻¹	0.005	0.3
Stack Gas Temperature	K	307.15	-	-	N/A	-	-	-
Stack Gas Velocity	m.s ⁻¹	7.38	-	-	N/A	-	-	-
Volumetric Flow Rate	m ³ .h ⁻¹	1506	-	2,520	Yes	-	-	-

Accreditation details

Air Scientific Limited	INAB319T
External Analytical Laboratory	UKAS0605
Other	-

Executive Summary

Monitoring Dates & Times

Parameter	Run	Location ID	Sampling Dates	Sampling Time On	Sampling Time Off	Duration (mins.)
T A Luft Organics	Run 1	A3	06/11/2014	08:20:00	08:53:00	00:33:00
	Run 2					
	Run 3					

Executive Summary

Process details

Parameter	
Process status	Normal
Capacity (per/hour) (if applicable)	N/a
Continuous or Batch Process	Batch
Feedstock	Process Air
Abatement System	Yes
Abatement Systems Running Status	Normal
Fuel	N/A
Plume Appearance	No
Other information	None

Executive Summary

Monitoring, Equipment & Analytical Methods

	Monitoring				Analysis	
Parameter	Standard	Technical Procedure	Accredited Testing	Testing Lab	Analytical Technique	Analysis Lab
T A Luft Organics	EN13649:2002	SOP 2019	No	AirSci	Thermal Desorption	RPS
Stack Gas Temperature	EN16911:2013	SOP 2005	Yes	AirSci	Thermocouple[le	AirSci
Stack Gas Velocity	EN16911:2013	SOP 2005	Yes	AirSci	Pitot tubes	AirSci

List of Equipment

ID	Item of Equipment	Manufacturer	Serial No.
ASLTM12EQ506	SKC Aircheck Sampler	SKC	826121
ASLTM12EQ508	DryCal DC Lite Primary Flow Metre	BIOS	7298
ASLTM12EQ517	Testo 400 Gas Pressure Vacuum and Flow	Testo	00828828/305
ASLTM13EQ501	Stanley 8m Measuring Tape	Stanley	33-726
ASLTM13EQ502	6" Vernier Caliper	MEDID	N/A
ASLTM13EQ505	S TYPE PITOT TUBE	Tecora	1347
ASLTM14EQ512	GemRed Electronic Level 0 to 180 Degrees	GemRed	8088

Sampling Deviations

Parameter	Deviation
Standard ID	EN16911 - in accordance with MID 6911-1
Standard ID	-
Standard ID	-
Standard ID	-

Reference Documents

Risk Assessment (RA)	SOP1011
Site Review (SR)	SOP1015
Site Specific Protocol (SSP)	SOP1015

Executive Summary

Suitability of sampling location

General Information	Value
Permanent/Temporary	Temporary
Inside/ Outside	Inside

Platform Details		
Irish EPA Technical Guidance Note AG1 / BS EN 15259 Platform Requirements	Value	Comment
Sufficient Working area to manipulate probe and measuring instruments	N/A	Cherry picker
Platform has 2 handrails (approx. 0.5m & 1.0 m high)	N/A	-
Platform has vertical base boards (approx. 0.25 m high)	N/A	-
Platform has chains / self closing gates at top of ladders	N/A	-
There are no obstructions present which hamper insertion of sampling equipment	N/A	-
Safe Access Available	N/A	-
Easy Access Available	N/A	-

Sampling Location / Platform Improvement Recommendations
Install ports and platform in accordance with AG1

BSEN 15259 Homogeneity Test Requirements
1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack
E.g. Select Option 1: There is no requirement to perform a BSEN15259 Homogeneity Test on this stack 2: Test results were obtained from previous Homogeneity test carried out by ASL 3: Test results were obtained from previous Homogeneity test carried out by Alternative contractor 4: Other: Enter Description

Executive Summary

Stack diagram



APPENDICES

II. *Appendix I Monitoring Personnel & Equipment*

Stack Emissions Monitoring Personnel

Team Leader	Name	John Casey
	Qualifications	PhD. (Eng.), MSc. (Agr.), B. Agr. Sc.
	System approval	Air Scientific Limited Approved
		-

III. Appendix II Stack Details & flow characteristics

Preliminary stack survey calculations

General Stack Details		
Stack details	Units	Value
Date of survey		06/11/2014
Time of survey		08:30
Type		Circular
Stack Diameter / Depth, D	m	0.29
Stack Width, W	m	-
Average Stack Gas Temp., Ta	C	34
Average Static Pressure, P static	kPa	0.001
Average Barometric Pressure, Pb	kPa	99.8
Type of Pitot		S
Are Water Droplets Present ?		No
Average Pitot Tube Calibration Coeff, Cp		0.85
Negative flow		No
Highly homogeneous flow stream/gas velocity		Yes

Sample Port Size	mm	20
Initial Pitot Leak Check	Pa	121
Final Pitot Leak Check	Pa	121
Orientation of Duct		Vertical
Pitot Tube Cp		0.998
Number of Lines Available		2
Number of Lines Used		2

Sampling Line A						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.07	41	-	7.3	-	<15
3	0.22	43	-	7.4	-	<15
4	0.27	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	42.00	-	7.34	-	<15
Min	-	41	-	7.25	-	<15
Max	-	43	-	7.43	-	<15

Sampling Line B						
Point	Distance to duct (m)	Pa	Temp °C	Velocity (m/s)	Oxygen (%)	Angle of Swirl
1	0.02	-	-	-	-	-
2	0.07	40	-	7.2	-	<15
3	0.22	46	-	7.7	-	<15
4	0.27	-	-	-	-	-
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
Average	-	43.00	-	7.42	-	<15
Min	-	40	-	7.17	-	<15
Max	-	46	-	7.68	-	<15

Document No.: RIENTL1061114 / 2014499
 Visit No: 2
 Year: 2014
 Office: Trim

IPPC Licence No.: WL192-03
 Licence Holder: Rilta Environmental Limited, A3
 Facility Location: Rilta Environmental Limited, Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin, Dublin.
 Rev.No: 1

Component	Conc. ppm	Conc. Dry % v/v	Conc. Wet % v/v	Molar Mass
Carbon Dioxide CO ₂	-	0.04	-	44.01
Oxygen O ₂	-	20.9	-	32
Nitrogen N ₂	-	79	-	28.1
Moisture (H ₂ O)	-	-	2.1	18.02
Reference Conditions				
	Units	Numbers		
Temperature	°C	273.15		
Total Pressure	kPa	101.3		
Moisture	%	-		
Oxygen (Dry)	%	No Oxygen Ref		

Stack Gas Composition & Molecular Weights								
Component	Molar Mass M	Density Kg/m³ p	Conc. Dry % v/v	Dry Volume Fraction r	Dry Conc. kg/m³ pi	Conc. wet % v/v	Wet Volume Fraction r	Wet Conc.kg/m³ pi
Carbon Dioxide CO ₂	44.01	1.96	0.04	0.0004	0.00	0.04	0.00	0.00
Oxygen O ₂	32	1.43	20.9	0.209	0.30	20.46	0.20	0.29
Nitrogen N ₂	28.1	1.25	79	0.79	0.99	77.34	0.77	0.97
Moisture (H ₂ O)	18.02	0.80	-	-	-	2.1	0.02	0.02
	-	-	-	-	-	-	-	-
where p=M/22.41	-	-	-	-	-	-	-	-
pi = r x p	-	-	-	-	-	-	-	-

Calculation of Stack Gas Densities		
Determinand	Units	Result
Dry Density (STP), P STD	kg.m ⁻³	1.290
Wet Density (STP), P STW	kg.m ⁻³	1.280
Dry Density (Actual), P Actual	kg.m ⁻³	1.130
Average wet Density (Actual), P ActualW	kg.m ⁻³	1.121
Where		
P STD = sum of component concentrations, kg/m ³ (excluding water vapour)	-	-
$P_{STW} = (P_{STD} + p_{i \text{ of H}_2\text{O}}) / (1 + (p_{i \text{ of H}_2\text{O}} / 0.8036))$	-	-
$P_{actual} = P_{STD} \times (T_{STP} / (P_{STP})) \times (P_a / T_a)$	-	-
$P_{actual \ W} \text{ (at each sampling point)} = P_{STW} \times (T_s / P_s) \times (P_a / T_a)$	-	-

Sampling Plane Validation Criteria	Value	Units	Requirement	Compliance	Method
Lowest Differential Pressure	40	Pa	>5 Pa	Yes	EN16911:2013
Lowest Gas Velocity	7.17	m/s	-	N/A	-
Highest Gas Velocity	7.68	m/s	-	N/A	-
Ratio of Above	1.07	:1	<3:1	Yes	EN16911:2013
Mean Velocity	7.38	m/s	-	N/A	-
Angle of flow with regard to duct axis	<15	degrees	< 15	Yes	EN16911:2013
No local negative flow	No	-	-	Yes	-
Homogeneous flow stream/gas velocity	Yes	-	-	Yes	-

Calculation of stack Gas Velocity, V	
Velocity at Traverse Point, $V = K_{cp} \cdot \sqrt{(2 \cdot DP) / \text{Density}}$	-
Where	
K_{pt} = Pitot tube calibration coefficient	0.85
Compressibility correction factor, assumed at a constant 0.998	0.998

Gas Volumetric Flowrate	Units	Result
Gas Volumetric Flow Rate (Actual)	$m^3 \cdot h^{-1}$	1756
Gas Volumetric Flow Rate (STP, Wet)	$m^3 \cdot h^{-1}$	1538
Gas Volumetric Flowrate (STP, Dry)	$m^3 \cdot h^{-1}$	1506
Gas Volumetric Flowrate REF to Oxygen	$m^3 \cdot h^{-1}$	-

IV. Appendix III Individual parameter sampling details and results

Total Volatile Organic Carbon (Tube) Sampling details

Sampling Details	Run 1	
Stack ID	A3	
	Tube	
Leak Check Results		
Prior to test:	0.0001	l/min
Post Test:	0.0001	l/min
Sample Volume Flow Rate:	0.4128	l/min
Standard Requirement:	<2	%
Test Result:	0.024225	%
Test Status	Pass	
Calibration Details		
Pump Number:	ASLTM12EQ505	
Calibration Unit:	ASLTM12EQ508	
Calibration Rate Before Test:	0.4128	l/min
Calibration Rate After Test:	0.4128	l/min
Average sample Volume:	0.4128	l/min
Sample Test Time:	33	Min.
Pump Gas Temperature:	25	°C
Pump Sample Pressure:	99.8	kPa
Actual Sample Volume:	0.01362	m ³
Normalised Gas Volume:	0.01229	m ³

Total Volatile Organic Carbon (Tube) Quality Assurance

Site Name	-	-
Stack ID	A3	-
Date	06/11/2014	Run 1
Start time	-	08:20:00
Finish Time	-	08:53:00
	Units	Run 1
Leak test results		
Mean Sampling Rate	l/min	0.4128
Pre-sampling leak rate	l/min	0.0001
Post-sampling leak rate	l/min	0.0001
Leak rate	l/min	0.02422481
Acceptable leak rate (<2%)	Y/N	Y
Filtration		
Filter Material	-	N/A
Filter Size	mm	N/A
Max. Filter Temp	degrees	N/A
Absorbers Type	Glass/PTFE/ Other	Charcoal Tubes
Blank sample	-	
Blank sample ID	mg/m ³	5105207321
Blank result	<10% ELV (Y/N)	8.5
Acceptable Blank	-	Y

Total Volatile Organic Carbon (Tube) Results and Measurement Uncertainty

Sampling Details		Run 1
Stack ID	A3	
Date	06/11/2014	
Start time	08:20:00	
Finish Time	08:53:00	
Results		
Laboratory Result	39	µg
Sample Volume	0.012295	m ³
Emissions Concentration	3.172075	mg.m ⁻³
Mass Emission	-	kg.h ⁻¹

Parameter	Units	Run 1
Combined Uncertainty	mg.m ⁻³	0.26
Expanded uncertainty as percentage of measured value	% of measured value	16.59
Expanded uncertainty in units of measurement	mg.m ⁻³	0.53
Expanded uncertainty as percentage of limit value	% Of ELV	0.35

Title:	Determination of Speciated Organic Compounds			
Method:	EN 13649			
Client:	Rilta Environmental Ltd			
Log Sheet Complete by:	John Casey			
Test Date:	06/11/2014			
Laboratory Used:	UKAS0605			
Certificate Numbers:	WK14-7338			
Stack Reference:	A3			
Leak Check Results				
Prior to test:	0.0001	l/min		
Post Test:	0.0001	l/min		
Sample Volume Flow Rate:	0.4128	l/min		
Standard Requirement:	<2	%		
Test Result:	0.024224806	%		
Test Status	Pass			
Calibration Details				
Pump Number:	ASLTM12EQ505			
Calibration Unit:	ASLTM12EQ508			
Calibration Rate Before Test:	0.4128	l/min		

Calibration Rate After Test:	0.4128	l/min		
Average sample Volume:	0.4128	l/min		
Sample Test Time:	33	minutes		
Pump Gas Temperature:	25	°C		
Pump Sample Pressure:	99.8	kPa		
Actual Sample Volume:	0.01362	m ³		
Normalised Gas Volume:	0.01229	Nm ³		
Tube Details				
Tube Type:	Charcoal Tubes			
Tube Identification Number:	5113306490			
Blank Identification Number:	5105207321			
Test Details				
Adsorption Tube Temperature:	25	°C		
Max Temperature Allowable:	40	°C		
Stack Flow Rates				
Diameter:	0.29	m		
Average Velocity:	7.38	m/s		
Average Temperature:	34	°C		
Average Pressure:	99.8	kPa		
Actual Flow Rate:	1756	m ³ /Hr		
Normalised Flow Rate:	1506	Nm ³ /Hr		
Speciated Organic Results				
Class I	µg/tube	mg/Nm3	kg/hr	
	0			
Class II				
M+P Xylene	25	2.03	0.0031	
Ethyl Benzene	6	0.49	0.0007	
O-Xylene	8	0.65	0.0010	
Class III				
	0			
Total Class I	0.00	mg/Nm3	0.000000	kg/Hr
Total Class II	3.17	mg/Nm3	0.004777	kg/Hr
Total Class III	0.00	mg/Nm3	0.000000	kg/Hr

APPENDIX F

Pollutant Release and Transfer Register (PRTR) 2013 & 2014



Environmental Protection Agency

| PRTR# : W0192 | Facility Name : Rilta Environmental Limited | Filename : W0192_2013.xlsm | Return Year : 2013 |

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.18

REFERENCE YEAR	2013
-----------------------	------

1. FACILITY IDENTIFICATION

Parent Company Name	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited
PRTR Identification Number	W0192
Licence Number	W0192-03

Waste or IPPC Classes of Activity

No.	class_name
4.13	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.
3.11	Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.12	Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.
3.13	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 concerned is produced.
3.7	##### Recycling or reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).
4.2	Recycling or reclamation of metals and metal compounds.
4.3	Recycling or reclamation of other inorganic materials.
4.4	Recovery of components used for pollution abatement.
4.6	Oil re-refining or other re-uses of oil.
Address 1	Block 402, Grant's Drive
Address 2	Greenogue Business Park
Address 3	Rathcoole
Address 4	County Dublin
	Dublin
Country	Ireland
Coordinates of Location	-8.48281 51.8695
River Basin District	IEEA
NACE Code	3832
Main Economic Activity	Recovery of sorted materials
AER Returns Contact Name	Colm Hussey
AER Returns Contact Email Address	colm.hussey@rilta.ie
AER Returns Contact Position	Site Manager
AER Returns Contact Telephone Number	01 401 8000
AER Returns Contact Mobile Phone Number	087 9176264
AER Returns Contact Fax Number	01 401 8080
Production Volume	0.0
Production Volume Units	
Number of Installations	0

Number of Operating Hours in Year	0
Number of Employees	71
User Feedback/Comments	
Web Address	www.rilta.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(a)	Installations for the recovery or disposal of hazardous waste
5(c)	Installations for the disposal of non-hazardous waste
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

Guidance on waste imported/accepted onto site

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	Yes
--	-----

Link to previous years emissions data

31/03/2014 10:10

W0192 | Facility Name : Rita Environmental Limited | File Name : W0192_2013.xlsm | Return Year : 2013

4.1 RELEASES TO AIR

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

No. Annex II	POLLUTANT	Name	METHOD		Please enter all quantities in this section in KGs					
			M/C/E	Method Code	Method Used	Description or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
							0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button.

SECTION B : REMAINING PRTR POLLUTANTS

No. Annex II	POLLUTANT	Name	METHOD		Please enter all quantities in this section in KGs					
			M/C/E	Method Code	Method Used	Description or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
							0.0	0.0	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button.

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

Pollutant No.	Pollutant	Name	METHOD		Emission Point 1	Emission Point 2	Emission Point 3	Please enter all quantities in this section in KGs					
			M/C/E	Method Code				Method Used	Description or Description	Blamudair measured result measured by 1000hrs operation	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
351	Total Organic Carbon (as C)		C	MAB				3.1	181.0	122.0	306.1	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button.

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their net methane (CH4) emission to the environment under 'Total' KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill:

Rita Environmental Limited

Please enter summary data on the quantities of methane flared and / or utilised

Total estimated methane generation (as per site record)	Methane flared	Methane utilised in ignifuge	Net methane emission (as reported in Section A above)	METHOD		Facility Total Capacity m3 per hour
				M/C/E	Method Code	
0.0	0.0	0.0	0.0 (Total Flaring Capacity)			N/A
0.0	0.0	0.0	0.0 (Total Utilising Capacity)			N/A

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

[Printer - 20/03/14] Facility Name: Pitts Environmental Limited (Pitts) - 480992_2013_26m (R50)

SECTION A : PRTR POLLUTANTS

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER		METHOD		Please enter all quantities in this section in KGs				
No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
17	Arsenic and compounds (as As)	M	MAB	Average measured result multiplied by the discharge volume		2.36	2.36	0.0
19	Chromium and compounds (as Cr)	M	MAB	Average measured result multiplied by the discharge volume		7.33	7.33	0.0
20	Copper and compounds (as Cu)	M	MAB	Average measured result multiplied by the discharge volume		4.49	4.49	0.0
23	Lead and compounds (as Pb)	M	MAB	Average measured result multiplied by the discharge volume		0.58	0.58	0.0
22	Nickel and compounds (as Ni)	M	MAB	Average measured result multiplied by the discharge volume		5.25	5.25	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

OFFSITE TRANSFER OF POLLUTANTS DESTINED FOR WASTE-WATER TREATMENT OR SEWER		METHOD		Please enter all quantities in this section in KGs				
Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
238	Ammonia (as N)	M	MAB	Average measured result multiplied by the discharge volume		24121.79	24121.79	0.0
303	BOD	M	MAB	Average measured result multiplied by the discharge volume		5989.64	5989.64	0.0
306	COD	M	MAB	Average measured result multiplied by the discharge volume		61861.82	61861.82	0.0
308	Detergents (as MBAS)	M	MAB	Average measured result multiplied by the discharge volume		16.27	16.27	0.0
324	Mineral oils	M	MAB	Average measured result multiplied by the discharge volume		7.65	7.65	0.0
240	Suspended Solids	M	MAB	Average measured result multiplied by the discharge volume		2374.39	2374.39	0.0
343	Sulphate	M	MAB	Average measured result multiplied by the discharge volume		1832.01	1832.01	0.0
206	Benzene & toluene & xylene (combined)	M	MAB	Average measured result multiplied by the discharge volume		2.13	2.13	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE
Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	M/C/E	Method Used		Location of Treatment	Haz Waste - Name and Licence/Permit No of Next Destination Facility Non-Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
							Method Used	Method Used				
To Other Countries	01 05 05	Yes	49.63	oil-containing drilling muds and wastes	D8	M	Weighted		Abroad	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	02 07 04	No	191.49	materials unsuitable for consumption or processing	R10	M	Weighted		Abroad	Kompositiesysteme Nord GmbH, 1062EB026		
To Other Countries	06 01 05	Yes	290.16	other acids	R6	M	Weighted		Abroad	REVA TECH SA, Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/240406	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	06 03 14	No	176.96	solid salts and solution other than those mentioned in 06 03 11 and 06 03 13	R5	M	Weighted		Abroad	3-7+31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany		
To Other Countries	08 01 11	Yes	51.87	waste paint and varnish containing organic solvents or other dangerous substances	R1	M	Weighted		Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780, Industrieleirein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands	Industrieleirein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	09 01 05	Yes	3.79	bleach solutions and bleach fixer solutions	R4	M	Weighted		Abroad	Remondis Production GmbH, WML/0707/M01	Remondis Production GmbH, WML/0707/M01 Brunnenstrasse 138, DE 44536, Lunen, Germany	Brunnenstrasse 138, DE 44536, Lunen, Germany
To Other Countries	10 01 01	No	467.8	Boiler Ash	R5	M	Weighted		Abroad	Lafarge Cement UK, P0052/04A	Lafarge Activite Plâtre, rue Marcel Demonge, 500, Zone du Pôle Technologique Agro Parc, F-84915 Avignon Cedex 9, France	rue Marcel Demonge, 500, Zone du Pôle Technologique Agro Parc, F-84915 Avignon Cedex 9, France
To Other Countries	10 01 04	Yes	0.81	oil fly ash and boiler dust	R5	M	Weighted		Abroad	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/240406	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/240406, 3-7+31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany	3-7+31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany
To Other Countries	11 01 05	Yes	24.24	pickling acids	R4	M	Weighted		Abroad	REVA TECH SA, Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/240406	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	11 01 09	Yes	46.39	sludges and filter cakes containing dangerous substances	R5	M	Weighted		Abroad	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/240406	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/240406, 3-7+31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany	3-7+31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany
To Other Countries	13 02 08	Yes	1026.93	other engine, gear and lubricating oils	R9	M	Weighted		Abroad	Holcim SA, 43797764	Holcim SA, 43797764, Rue des Fabriques, 2, Obourg, B7034, Belgium	Rue des Fabriques, 2, Obourg, B7034, Belgium
To Other Countries	13 03 01	Yes	0.0	insulating or heat transmission oils containing PCBs	D10	M	Weighted		Abroad	SITA Decontamination, DIPMVC/O 1F28/33629	SITA Decontamination, DIPMVC/O 1F28/33629, Westvaardijk, 97, Grimbergen, 1850, Netherlands	Westvaardijk, 97, Grimbergen, 1850, Netherlands

Transfer/Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste Name and Licence/ Permit No of Work Destination Facility Haz Waste Name and Licence/Permit No of Recoverer/Disposer	Haz Waste - Address of Not Non-Haz Waste Address of Recoverer/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	13 03 07	Yes	0.0	mineral-based non-chlorinated insulating and heat transmission oils	R9	M	Weighed	Abroad	Midland Oil Refinery,GP3135SD,Shelah Road,,Halesowen,B63 3PN,United Kingdom	Shelah Road,,Halesowen,B63 3PN,United Kingdom	Midland Oil Refinery,GP3135SD,Shelah Road,,Halesowen,B63 3PN,United Kingdom	Shelah Road,,Halesowen,B63 3PN,United Kingdom
To Other Countries	13 07 03	Yes	67.22	other fuels (including mixtures)	R9	M	Weighed	Abroad	Centec International,EA	The Science Park,Brooks Lane,,Middlewich,CW10 0JG,United Kingdom	Centec International,EA,Brooks Lane,,Middlewich,CW10 0JG,United Kingdom	Brooks Lane,,Middlewich,CW10 0JG,United Kingdom
To Other Countries	14 06 03	Yes	98.87	other solvents and solvent mixtures	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Vlasweg 12,4782 PW Moerdijk,, The Netherlands	Seaport M152,Vlasweg 12,4782 PW Moerdijk,, Netherlands	Industrieterrein - Seaport M152,Vlasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	15 01 02	No	0.03	plastic packaging	R3	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Vlasweg 12,4782 PW Moerdijk,, The Netherlands	Alvalstoffen Terminal Moerdijk,, Netherlands	Industrieterrein - Seaport M152,Vlasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	15 01 04	No	0.12	metallic packaging	R4	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Vlasweg 12,4782 PW Moerdijk,, The Netherlands	Alvalstoffen Terminal Moerdijk,, Netherlands	Industrieterrein - Seaport M152,Vlasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	15 02 02	Yes	850.06	absorbents filter materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Vlasweg 12,4782 PW Moerdijk,, The Netherlands	Alvalstoffen Terminal Moerdijk,, Netherlands	Industrieterrein - Seaport M152,Vlasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	15 02 03	No	20.35	absorbents filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Vlasweg 12,4782 PW Moerdijk,, The Netherlands	Alvalstoffen Terminal Moerdijk,, Netherlands	Industrieterrein - Seaport M152,Vlasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	16 01 07	Yes	21.29	oil filters	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Vlasweg 12,4782 PW Moerdijk,, The Netherlands	Alvalstoffen Terminal Moerdijk,, Netherlands	Industrieterrein - Seaport M152,Vlasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	16 02 09	Yes	0.0	transformers and capacitors containing PCBs	D10	M	Weighed	Abroad	Orion B.V.,18/07/2937	De Steven,25,AX Drachten,9206, Netherlands	Orion B.V.,18/07/2937 De Steven,25,AX Drachten,9206,Netherlands	De Steven,25,AX Drachten,9206,Netherlands
To Other Countries	16 02 14	No	0.05	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Vlasweg 12,4782 PW Moerdijk,, The Netherlands	Alvalstoffen Terminal Moerdijk,, Netherlands	Industrieterrein - Seaport M152,Vlasweg 12,,4782 PW Moerdijk,Netherlands
Within the Country	16 02 14	No	0.0	discarded equipment other than those mentioned in 16 02 09 to 16 02 13	R4	M	Weighed	Offsite in Ireland	The Recycling Village Ltd, WP2007/20	Park,,Monasterboice,Co. Louth,Ireland	De Steven,25,AX Drachten,9206, Netherlands	De Steven,25,AX Drachten,9206,Netherlands
To Other Countries	16 05 04	Yes	6.95	gases in pressure containers (including halons) containing dangerous substances	R3	M	Weighed	Abroad	PHS Group,EA	Block B,Western Industrial Estate,Caerphilly,CF83 1XH,United Kingdom	PHS Group,EA,Block B,Western Industrial Estate,Caerphilly,CF83 1XH,United Kingdom	Block B,Western Industrial Estate,Caerphilly,CF83 1XH,United Kingdom

Transfer Destination	European Waste Code	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste, Name and Licence/Permit No of Next Destination Facility Haz. Waste, Name and Licence/Permit No of Recover/Disposer	Haz. Waste, Address of Next Destination Facility Next Destination, Address of Recover/Disposer	Name and Licence / Permit No. and Address of Recover/Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (HAZARDOUS WASTE ONLY)
					M/C/E	Method Used					
To Other Countries	16 05 06	117.54	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780 Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	16 05 07	103.5	discarded inorganic chemicals consisting of or containing dangerous substances	R6	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780 REVA TECH SA, Zoning 'Industriël D'Ehren, B 4480 ENGIS, Belgium	Zoning 'Industriël D'Ehren, B 4480 ENGIS, Belgium	Zoning 'Industriël D'Ehren, B 4480 ENGIS, Belgium	
To Other Countries	16 06 01	4891.22	lead batteries	R4	M	Weighed	Abroad	HJ Enthoven & Sons, BL5598	Darley Dale Smelter, South Darley, Derbyshire, DE4 2LP, United Kingdom	Darley Dale Smelter, South Darley, Derbyshire, DE4 2LP, United Kingdom	
Within the Country	16 06 02	12.05	Ni-Cd batteries	R4	M	Weighed	Offsite in Ireland	Electrical Waste Ireland, Permit No. WFP-DS-09-0012-01	Jordanstown drive, Unit 648 Greenogue Business Park, Rathcoole, Co. Dublin, Ireland	Jordanstown Drive Unit 648 Greenogue Business Park, Rathcoole Co Dublin, Ireland	
Within the Country	16 06 04	8.06	alkaline batteries (except 16 06 03)	R4	M	Weighed	Offsite in Ireland	The Recycling Village Ltd., WP2007/20	Unit 4 Tinure Business Park, Monasterboice, Co. Louth, Ireland	Jordanstown Drive Unit 648 Greenogue Business Park, Rathcoole, Co. Dublin, Ireland	
Within the Country	16 06 04	9.4	alkaline batteries (except 16 06 03)	R4	M	Weighed	Offsite in Ireland	Electrical Waste Ireland, Permit No. WFP-DS-09-0012-01	Unit 4 Tinure Business Park, Monasterboice, Co. Dublin, Ireland	Jordanstown Drive Unit 648 Greenogue Business Park, Rathcoole, Co. Dublin, Ireland	
Within the Country	16 06 05	1.16	other batteries and accumulators	R4	M	Weighed	Offsite in Ireland	The Recycling Village Ltd., WP2007/20	Unit 4 Tinure Business Park, Monasterboice, Co. Louth, Ireland	Jordanstown Drive Unit 648 Greenogue Business Park, Rathcoole, Co. Dublin, Ireland	
To Other Countries	16 10 01	131.91	aqueous liquid wastes containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	16 10 01	534.74	aqueous liquid wastes containing dangerous substances	D8	M	Weighed	Abroad	REVA TECH SA, Zoning 'Industriël D'Ehren, B 4480 ENGIS, Belgium	Zoning 'Industriël D'Ehren, B 4480 ENGIS, Belgium	Zoning 'Industriël D'Ehren, B 4480 ENGIS, Belgium	
To Other Countries	16 10 01	500.55	aqueous liquid wastes containing dangerous substances	D10	M	Weighed	Abroad	Sava Gmbh & Co., Kompositsysteme Nord GmbH, 1082EE026	Osterweute, Ce25541, Bruns buttel, Germany	Osterweute, Ce25541, Bruns buttel, Germany	
To Other Countries	16 10 01	15.63	aqueous liquid wastes containing dangerous substances	R10	M	Weighed	Abroad	Kompositsysteme Nord GmbH, 1082EE026	Industriepark 6 D-27777, Ganderkesee, Germany	Industriepark 6 D-27777, Ganderkesee, Germany	
To Other Countries	17 03 01	1.6	bituminous mixtures containing coal tar	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 14/12/4149	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	17 05 03	7100.64	soil and stones containing dangerous substances	D5	M	Weighed	Abroad	Terracon GmbH, 74-76 Hovestrasse, 20539 Hamburg, Germany	74-76 Hovestrasse, 20539 Hamburg, Germany	74-76 Hovestrasse, 20539 Hamburg, Germany	

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste: Address of Next Destination Facility Non-Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used				
Within the Country	17 05 04	No	2744.96	soil and stones other than those mentioned in 17 05 03	R5	M	Weighed	Offsite in Ireland	Knockharney Landfill, Kentstown, Co. Meath, Ireland	Helko Neumann Entsorgungfachbetrieb, Dep onie Reesen GmbH & Co. KG, Johann - Sebastian - Bach - Strabe 60, 39288 Burg, Germany	Depone Reesen GmbH & Co. KG, Johann - Sebastian - Bach - Strabe 60, 39288 Burg, Germany
To Other Countries	17 06 01	Yes	64.33	insulation materials containing asbestos	D1	M	Weighed	Abroad	Helko Neumann Entsorgungfachbetrieb, Bimohler GEG mbH, EGO108, Strasse 57a, Grossenasppe, 2 4623, Germany	Bimohler GEG mbH, EGO108, Strasse 57a, Grossenasppe, 2 4623, Germany	Bimohler GEG mbH, EGO108, Strasse 57a, Grossenasppe, 2 4623, Germany
To Other Countries	18 01 09	No	3.54	medicines other than those mentioned in 18 01 08	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780
To Other Countries	18 02 08	No	87.87	medicines other than those mentioned in 18 02 07	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780
To Other Countries	19 02 05	Yes	11.74	sludges from physico/chemical treatment containing dangerous substances	R5	M	Weighed	Abroad	Zimmermann Sonderabfallsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/ 240406 3-7-31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany	Zimmermann Sonderabfallsorgung und Verwertung & Co KG Festsstoffkonditionierung, 783/ 240406 3-7-31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany	3-7-31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany
To Other Countries	19 02 05	Yes	7.42	sludges from physico/chemical treatment containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780
To Other Countries	19 08 12	No	53.32	mentioned in 19 08 11	R1	M	Weighed	Abroad	Granex Ltd, CP3230BE	Granex Ltd, CP3230BE	Granex Ltd, CP3230BE
Within the Country	19 12 02	No	0.0	ferrous metal	R4	M	Weighed	Offsite in Ireland	A 1 Metal, WMP007d	A 1 Metal, WMP007d	A 1 Metal, WMP007d
To Other Countries	20 01 21	Yes	0.15	fluorescent tubes and other mercury-containing waste	R4	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780
To Other Countries	20 01 27	Yes	205.44	paint, inks, adhesives and resins containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 821780

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste - Name and Licence/Permit No of Next Destination Facility (Ref. to No of Recover/Disposer)	Haz. Waste - Address of Next Destination Facility (Ref. to No of Recover/Disposer)	Name and License / Permit No. and Address of Recover/Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (Ref. to F.R. or F.R. No (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	20 01 27	Yes	119.5	paint, inks, adhesives and resins containing dangerous substances	R3	M	Weighed	Abroad	Nehlsen GmbH & Co. A-4187HH, Neiderlassung	Neiderlassung Nehlsen-Pilmp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Nehlsen GmbH & Co. A-4187HH, Neiderlassung Nehlsen-Pilmp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderlassung Nehlsen-Pilmp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany
To Other Countries	20 01 27	Yes	24.12	paint, inks, adhesives and resins containing dangerous substances	R1	M	Weighed	Abroad	Recyfuel, Sava GmbH & Co. A-4187HH	Recyfuel, Sava GmbH & Co. A-4187HH, Neiderlassung	Recyfuel, Sava GmbH & Co. A-4187HH, Neiderlassung	Recyfuel, Sava GmbH & Co. A-4187HH, Neiderlassung
To Other Countries	20 01 27	Yes	0.67	paint, inks, adhesives and resins containing dangerous substances	D10	M	Weighed	Abroad	Sava GmbH & Co.	Ostenvueite, Ce25541, Bruns buttel, Germany	Ostenvueite, Ce25541, Bruns buttel, Germany	Ostenvueite, Ce25541, Bruns buttel, Germany
To Other Countries	01 01 01	No	3.32	wastes from mineral excavation	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	01 05 05	Yes	0.46	oil-containing drilling muds and wastes	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	01 05 05	Yes	1541.87	oil-containing drilling muds and wastes	R9	M	Weighed	Abroad	Nov Brandt Environmental Division,	Aberdeen, Scotland, United Kingdom	Nov Brandt Environmental Division, Aberdeen, Scotland, United Kingdom	Aberdeen, Scotland, United Kingdom
To Other Countries	02 03 04	No	1.16	materials unsuitable for consumption or processing	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	02 07 02	No	52.46	wastes from spirits distillation	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Nehlsen GmbH & Co. A-4187HH, Neiderlassung	Neiderlassung Nehlsen-Pilmp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany
To Other Countries	03 02 01	Yes	1.1	non-halogenated organic wood preservatives	R3	M	Weighed	Abroad	Nehlsen GmbH & Co. A-4187HH	Neiderlassung Nehlsen-Pilmp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderlassung Nehlsen-Pilmp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderlassung Nehlsen-Pilmp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany
To Other Countries	05 07 99	No	3.04	wastes not otherwise specified	D8	M	Weighed	Abroad	REVATECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	05 01 01	Yes	6.91	sulphuric acid and sulphurous acid	R6	M	Weighed	Abroad	REVATECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	05 01 02	Yes	1.98	hydrochloric acid	R6	M	Weighed	Abroad	REVATECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	05 01 05	Yes	22.93	nitric acid and nitrous acid	R6	M	Weighed	Abroad	REVATECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	05 01 99	No	0.13	wastes not otherwise specified	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands

Transfer Destination	European Waste Code	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste: Name and Licence/Permit No of Next Destination Facility Haz. Waste: Name and Licence/Permit No of Recover/Disposer	Haz. Waste: Address of Next Destination Facility Next Destination: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Receiver/ Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (if different from above) (HAZARDOUS WASTE ONLY)
					M/C/E	Method Used					
To Other Countries	06 02 04	32.54	sodium and potassium hydroxide	R6	M	Weighted	Abroad	REVA TECH SA, Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVA TECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	06 02 05	2.52	other bases	R6	M	Weighted	Abroad	REVA TECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVA TECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	06 08 99	0.14	wastes not otherwise specified	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	06 13 03	0.06	carbon black	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	07 01 04	0.1	other organic solvents, washing liquids and mother liquors	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	07 02 17	0.04	waste containing silicones other than those mentioned in 07 02 16	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	07 03 01	0.94	aqueous washing liquids and mother liquors	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	07 03 04	0.02	other organic solvents, washing liquids and mother liquors	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	07 03 10	0.12	other filter cakes and spent absorbents	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	07 05 04	16.52	other organic solvents, washing liquids and mother liquors	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	07 06 04	0.41	other organic solvents, washing liquids and mother liquors	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrialrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	08 01 11	52.13	waste paint and varnish containing organic solvents or other dangerous substances	R1	M	Weighted	Abroad	Recy(fuel), Engis, Belgium	Engis, Belgium	Recy(fuel), Engis, Belgium	Engis, Belgium

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste: Name and Licence/Permit No of Next Destination Facility Haz. Waste: Name and Licence/Permit No of Recover/Disposer	Haz. Waste: Address of Next Destination Facility Next Destination: Address of Recover/Disposer	Name and License/ Permit No. and Address of Recover/Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (HAZARDOUS WASTE ONLY)
						IM/C/E	Method Used					
To Other Countries	08 01 13	Yes	4.13	sludges from paint or varnish containing organic solvents or other dangerous substances	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 01 19	Yes	0.43	aqueous suspensions containing paint or varnish containing organic solvents or other dangerous substances	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 01 20	No	0.43	aqueous suspensions containing paint or varnish other than those mentioned in 08 04 01 19	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 03 08	No	8.3	aqueous liquid waste containing ink	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 03 12	Yes	23.63	waste ink containing dangerous substances	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 03 12	Yes	14.31	waste ink containing dangerous substances	R1	M	Weighted	Abroad	Recyfuel, Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium	Engis, B4480, Belgium	
To Other Countries	08 03 13	No	1.24	waste ink other than those mentioned in 08 03 12	R1	M	Weighted	Abroad	Recyfuel, Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium	Engis, B4480, Belgium	
To Other Countries	08 03 13	No	0.13	waste ink other than those mentioned in 08 03 12	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 03 17	Yes	0.06	waste printing toner containing dangerous substances	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 04 09	Yes	0.75	waste adhesives and sealants containing organic solvents or other dangerous substances	R1	M	Weighted	Abroad	Recyfuel, Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium	Engis, B4480, Belgium	
To Other Countries	08 04 09	Yes	8.86	waste adhesives and sealants containing organic solvents or other dangerous substances	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	08 04 10	No	5.2	waste adhesives and sealants other than those mentioned in 08 04 09	R1	M	Weighted	Abroad	Recyfuel, Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium	Engis, B4480, Belgium	
To Other Countries	08 04 13	Yes	3.68	aqueous sludges containing adhesives or sealants containing organic solvents or other dangerous substances	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	

Transfer Destination To Other Countries	European Waste Code	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	M/C/E	Method Used		Location of Treatment	Hazardous	Haz Waste - Name and Licence/Permit No of Next Destination Facility Haz Waste - Name and Licence/Permit No of Recover/Disposer	Haz Waste - Address of Next Destination Facility Non-Haz Waste - Address of Recover/Disposer	Name and Licence / Permit No. and Address of Final Recovery/Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (ie. Final Recovery/Disposal Site) (HAZARDOUS WASTE ONLY)
						M	Weighted						
To Other Countries	08 04 99	1.15	wastes not otherwise specified	R1	M		Recycled	Abroad	No	Recycling, ...	Engls, ...B4480, Belgium		
To Other Countries	08 04 99	1.16	wastes not otherwise specified	R1	M		Weighted	Abroad	No	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands		
To Other Countries	09 01 01	0.48	water-based developer and activator solutions	R4	M		Weighted	Abroad	Yes	Remondis Production GmbH, WML0707M01	Brunnenstrasse 138, DE 44536 Lunen, Germany	Remondis Production GmbH, WML0707M01, Brunnenstrasse 138, DE 44536 Lunen, Germany	Brunnenstrasse 138, DE 44536 Lunen, Germany
To Other Countries	09 01 04	35.99	fixed solutions bottom ash, slag and boiler dust from co-incineration containing dangerous substances	R4	M		Weighted	Abroad	Yes	Remondis Production GmbH, WML0707M01	Brunnenstrasse 138, DE 44536 Lunen, Germany	Remondis Production GmbH, WML0707M01, Brunnenstrasse 138, DE 44536 Lunen, Germany	Brunnenstrasse 138, DE 44536 Lunen, Germany
To Other Countries	10 01 14	0.13	substances	R1	M		Weighted	Abroad	Yes	Recycling, ...	Engls, ...B4480, Belgium		Engls, ...B4480, Belgium
To Other Countries	10 01 14	0.49	bottom ash, slag and boiler dust from co-incineration containing dangerous substances	R1	M		Weighted	Abroad	Yes	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	10 13 14	0.06	waste concrete and concrete sludge	R1	M		Weighted	Abroad	No	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands		
To Other Countries	11 01 05	23.84	pickling acids	R4	M		Weighted	Abroad	Yes	TIB Chemicals AG, Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Fassortkonditionierung, 783/ 240405	16-22 Muelheimer Strasse 68219, Mannheim, Germany	TIB Chemicals AG, 16-22 Muelheimer Strasse 68219, Mannheim, Germany	16-22 Muelheimer Strasse 68219, Mannheim, Germany
To Other Countries	11 01 10	6.99	sludges and filter cakes other than those mentioned in 11 01 09	R5	M		Weighted	Abroad	No		3-7-31 Gottlieb-Daimler Strasse, DE 33334, Guterslo, Germany		
To Other Countries	11 01 11	0.14	aqueous rinsing liquids containing dangerous substances	R1	M		Weighted	Abroad	Yes	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	11 03 01	1.26	waste containing cyanide	R1	M		Weighted	Abroad	Yes	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	11 05 03	2.82	solid wastes from gas treatment	R1	M		Weighted	Abroad	Yes	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvaststoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	12 01 03	3.83	non-ferrous metal filings and turnings	R6	M		Weighted	Abroad	No	REVATECH SA,	Zoning Industriel D'Erebin, B 4480 ENGIS, Belgium		

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Licence/Permit No of Next Destination Facility Haz Waste: Name and Licence/Permit No of Recover/Disposer	Haz Waste: Address of Next Destination Facility Non-Haz Waste: Address of Recover/Disposer	Name and License /Permit No and Address of Final Receiver / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (ie. Recovery Facility Site (HAZARDOUS WASTE ONLY))
						M/C/E	Method Used					
To Other Countries	12 01 09	Yes	183.45	machining emulsions and solutions free of halogens	D10	M	Weighed	Abroad	Sava GmbH & Co.	Osterweute, Ce25541, Bruns buttel, Germany	Sava GmbH & Co., 1 Osterweute, Ce25541, Bruns buttel, Germany	Osterweute, Ce25541, Bruns buttel, Germany
To Other Countries	12 01 09	Yes	0.96	machining emulsions and solutions free of halogens	R1	M	Weighed	Abroad	Alvastoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	12 01 09	Yes	14.57	machining emulsions and solutions free of halogens	R1	M	Weighed	Abroad	Recyfuel,	Engis, B4480, Belgium	Recyfuel, Engis, B4480, B elgium	Engis, B4480, Belgium
To Other Countries	12 03 01	Yes	1.14	aqueous washing liquids mineral-based chlorinated engine, gear and lubricating oils	R6	M	Weighed	Abroad	REVATECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	13 02 04	Yes	0.42	mineral-based non-chlorinated engine, gear and lubricating oils	R1	M	Weighed	Abroad	Recyfuel,	Engis, B4480, Belgium	Recyfuel, Engis, B4480, B elgium	Engis, B4480, Belgium
To Other Countries	13 02 05	Yes	0.97	and lubricating oils	R1	M	Weighed	Abroad	Recyfuel,	Engis, B4480, Belgium	Recyfuel, Engis, B4480, B elgium	Engis, B4480, Belgium
To Other Countries	13 02 05	Yes	1.61	and lubricating oils	R1	M	Weighed	Abroad	Alvastoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	13 02 06	Yes	0.34	synthetic engine, gear and lubricating oils	R1	M	Weighed	Abroad	Alvastoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	13 02 08	Yes	76.94	other engine, gear and lubricating oils	R9	M	Weighed	Abroad	Midland Oil Refinery, GP3135SD	Shelah Road, Halesowen, B63 3PN, United Kingdom	Refinery, GP3135SD Shelah Road, Halesowen, B63 3PN, United Kingdom	Shelah Road, Halesowen, B63 3PN, United Kingdom
To Other Countries	13 02 08	Yes	4.99	other engine, gear and lubricating oils	R1	M	Weighed	Abroad	Alvastoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	13 02 08	Yes	4.21	other engine, gear and lubricating oils	D8	M	Weighed	Abroad	REVATECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	13 02 08	Yes	4.38	other engine, gear and lubricating oils	R1	M	Weighed	Abroad	Recyfuel,	Engis, B4480, Belgium	Recyfuel, Engis, B4480, B elgium	Engis, B4480, Belgium
To Other Countries	13 03 06	Yes	0.49	mineral-based chlorinated insulating and heat transmission oils other than those mentioned in 13 03 01	R1	M	Weighed	Abroad	Alvastoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	13 07 02	Yes	3.7	petrol	R9	M	Weighed	Abroad	Centec international, EA	The Science Park, Brooks Lane, Middlewich, CW10 0JG, United Kingdom	International, EA, Brooks Lane, Middlewich, CW10 0JG, United Kingdom	Brooks Lane, Middlewich, CW10 0JG, United Kingdom

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Site Waste - Name and Licence/Permit No of Next Destination Facility Licence/Permit No of Receiver/Disposer	Site Waste - Address of Next Destination Facility Licence/Permit No of Receiver/Disposer	Name and Licence / Permit No. and Address of Receiver/Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (ie. Final Recovery / Disposal Site) (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	13 07 03	Yes	0.08	other fuels (including mixtures)	R1	M	Weighed	Abroad	Alvalostoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	14 06 03	Yes	16.41	other solvents and solvent mixtures	D10	M	Weighed	Abroad	Sava Gmbh & Co.	Ostenweute,Ce25541,Brunsbüttel,,Germany	Sava Gmbh & Co.,1 Ostenweute,Ce25541,Brunsbüttel,,Germany	Ostenweute,Ce25541,Brunsbüttel,,Germany
To Other Countries	14 06 05	Yes	3.77	sludges or solid wastes containing other solvents	R1	M	Weighed	Abroad	Alvalostoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	15 01 07	No	0.07	glass packaging	R1	M	Weighed	Abroad	Alvalostoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalostoffen Terminal Moerdijk	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	15 01 10	Yes	49.95	packaging containing residues of or contaminated by dangerous substances	R1	M	Weighed	Abroad	Alvalostoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	15 01 10	Yes	24.41	packaging containing residues of or contaminated by dangerous substances	R3	M	Weighed	Abroad	Nehlsen Gmbh & Co.,A-4187HH	Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Nehlsen Gmbh & Co.,A-4187HH,Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany
To Other Countries	15 02 02	Yes	244.77	absorbents, filler materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R3	M	Weighed	Abroad	Nehlsen Gmbh & Co.,A-4187HH	Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Nehlsen Gmbh & Co.,A-4187HH,Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany
To Other Countries	15 02 02	Yes	66.26	absorbents, filler materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R3	M	Weighed	Abroad	Recyfuel,	Engis, B4480,Belgium	Recyfuel,Engis, B4480,Belgium	Engis, B4480,Belgium
To Other Countries	15 02 03	No	5.69	absorbents, filler materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	R3	M	Weighed	Abroad	Nehlsen Gmbh & Co.,A-4187HH	Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Nehlsen Gmbh & Co.,A-4187HH	Neiderlassung Nehlsen-Plimp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany
To Other Countries	15 02 03	No	8.01	absorbents, filler materials, wiping cloths and protective clothing other than those mentioned in 15 02 02	R3	M	Weighed	Abroad	Recyfuel,	Engis, B4480,Belgium	Recyfuel,Engis, B4480,Belgium	Engis, B4480,Belgium
To Other Countries	16 01 13	Yes	0.24	brake fluids	R1	M	Weighed	Abroad	Alvalostoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands

Transfer/Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste - Name and Licence/Permit No of Next Destination Facility Haz. Waste Name and Licence/Permit No of Recover/Disposer	Haz. Waste - Address of Next Destination Facility Non-Haz. Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recoverer/Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	16 01 13	Yes	0.24 brake fluids		R1	M	Weighed	Abroad	Nehlsen Gmbh & Co. A-4187HH,Neiderlassung Nehlsen-Plimp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderlassung Nehlsen-Plimp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderlassung Nehlsen-Plimp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	
To Other Countries	16 01 14	Yes	0.31 antifreeze fluids containing dangerous substances		R3	M	Weighed	Abroad	Nehlsen Gmbh & Co. A-4187HH	Neiderlassung Nehlsen-Plimp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderlassung Nehlsen-Plimp, Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	
To Other Countries	16 01 14	Yes	10.83 antifreeze fluids containing dangerous substances		R3	M	Weighed	Abroad	Sava Gmbh & Co.	Osterweute, Ce25541, Bruns buttel, Germany	Osterweute, Ce25541, Bruns buttel, Germany	
To Other Countries	16 01 14	Yes	1.43 antifreeze fluids containing dangerous hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14		R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	16 01 21	Yes	0.79 inorganic wastes containing dangerous substances		R1	M	Weighed	Abroad	Recyfuel, Moerdijk	Engis, B4480, Belgium	Engis, B4480, Belgium	
To Other Countries	16 03 03	Yes	8.51 inorganic wastes containing dangerous substances		R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	16 03 03	Yes	0.13 inorganic wastes containing dangerous substances		D10	M	Weighed	Abroad	AGR mbh - RZR Herten, Germany	Im Emscherbruch 11, 45699 Herten, Germany	Im Emscherbruch 11, 45699 Herten, Germany	
To Other Countries	16 03 03	Yes	0.07 inorganic wastes containing dangerous substances other than those mentioned in 16 03 03		R1	M	Weighed	Abroad	Recyfuel, REVATECH SA,	Engis, B4480, Belgium Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Engis, B4480, Belgium	
To Other Countries	16 03 04	No	1.2 organic wastes other than those mentioned		R6	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk	B.V., 14/12/4149, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	16 03 05	Yes	0.03 organic wastes containing dangerous substances		R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands	
To Other Countries	16 03 06	No	0.84 laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals		D10	M	Weighed	Abroad	Sava Gmbh & Co.	Osterweute, Ce25541, Bruns buttel, Germany	Osterweute, Ce25541, Bruns buttel, Germany	
To Other Countries	16 05 06	Yes	0.01 laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals		R3	M	Weighed	Abroad	PHS Group EA	Block B, Western Industrial Estate, Caerphilly, CF83 1XH, United Kingdom REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Block B, Western Industrial Estate, Caerphilly, CF83 1XH, United Kingdom REVATECH SA, Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	
To Other Countries	16 05 06	Yes	15.62 laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals		R6	M	Weighed	Abroad	REVATECH SA,	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	

Transfer/Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste - Name and Licence/Permit No. of Next Destination Facility Phys. Waste - Name and Licence/Permit No. of Recover/Disposer	Haz. Waste - Address of Next Destination Facility Non-Haz. Waste - Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer/ Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (i.e. Recover/Disposal Site) (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	16 05 06	Yes	10.56	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	D10	M	Weighted	Abroad	Sava Gmbh & Co., Osterweute,Ce25541,Brunsbüttel,,Germany	Osterweute,Ce25541,Brunsbüttel,,Germany	Sava Gmbh & Co., Osterweute,Ce25541,Brunsbüttel,,Germany	Osterweute,Ce25541,Brunsbüttel,,Germany
To Other Countries	16 05 06	Yes	6.3	mixtures of laboratory chemicals, including containing dangerous substances, including laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	R1	M	Weighted	Abroad	Recyfuel,, Engis,,...B4480,Belgium	Engis,,...B4480,Belgium	Recyfuel,, Engis,,...B4480,Belgium	Engis,,...B4480,Belgium
To Other Countries	16 05 07	Yes	54.28	discarded inorganic chemicals consisting of or containing dangerous substances	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,,The Netherlands	Alvalstoffen Terminal Moerdijk B.V.,14/12/1419,Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,,Netherlands	Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	16 05 07	Yes	7.71	discarded inorganic chemicals consisting of or containing dangerous substances	R10	M	Weighted	Abroad	Kompostsysteme Nord GmbH,108ZEB026	Industriepark 6,D-27777, Ganderkesee,,Germany	Kompostsysteme Nord GmbH,108ZEB026,Industriepark 6,D-27777, Ganderkesee,,Germany	Industriepark 6,D-27777, Ganderkesee,,Germany
To Other Countries	16 05 07	Yes	0.56	discarded inorganic chemicals consisting of or containing dangerous substances	D10	M	Weighted	Abroad	Sava Gmbh & Co.,	Osterweute,Ce25541,Brunsbüttel,,Germany	Sava Gmbh & Co., Osterweute,Ce25541,Brunsbüttel,,Germany	Osterweute,Ce25541,Brunsbüttel,,Germany
To Other Countries	16 05 07	Yes	0.18	discarded inorganic chemicals consisting of or containing dangerous substances	R4	M	Weighted	Abroad	Remondis Production GmbH,WML0707M01	Brunnenstrasse 138,DE 44536,Lunen,,Germany	Remondis Production GmbH,WML0707M01 Brunnenstrasse 138,DE 44536,Lunen,,Germany	Brunnenstrasse 138,DE 44536,Lunen,,Germany
To Other Countries	16 05 07	Yes	0.79	discarded inorganic chemicals consisting of or containing dangerous substances	R3	M	Weighted	Abroad	Nehlsen Gmbh & Co.,A-4187HH	Neiderlassung Nehlsen-Pilmp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Neiderlassung Nehlsen-Pilmp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Neiderlassung Nehlsen-Pilmp,Betriebsstätte Bremen,Louis-Krages Strasse 10,Bremen,Germany
To Other Countries	16 05 08	Yes	38.09	discarded organic chemicals consisting of or containing dangerous substances	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,,The Netherlands	Alvalstoffen Terminal Moerdijk B.V.,14/12/1419,Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,,Netherlands	Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	16 05 08	Yes	21.26	discarded organic chemicals consisting of or containing dangerous substances	R6	M	Weighted	Abroad	REVATECH SA,,	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,Belgium	REVATECH SA,, Zoning 'Industrial D'Ehein,B 4480 ENGIS,,Belgium	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,Belgium
To Other Countries	16 05 08	Yes	1.15	discarded organic chemicals consisting of or containing dangerous substances other than those mentioned in 16 05 06, 16 05 07 or 16 05 08	R1	M	Weighted	Abroad	Recyfuel,,	Engis,,...B4480,Belgium	Recyfuel,, Engis,,...B4480,Belgium	Engis,,...B4480,Belgium
To Other Countries	16 05 09	No	0.83	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08	D10	M	Weighted	Abroad	Sava Gmbh & Co.,	Osterweute,Ce25541,Brunsbüttel,,Germany	Sava Gmbh & Co., Osterweute,Ce25541,Brunsbüttel,,Germany	Osterweute,Ce25541,Brunsbüttel,,Germany
To Other Countries	16 05 09	No	2.65	discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,,The Netherlands	Alvalstoffen Terminal Moerdijk B.V.,14/12/1419,Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,,Netherlands	Industrieterrein - Seaport M152,Viasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	16 07 08	Yes	1.91	wastes containing oil	R9	M	Weighted	Abroad	Centec International,EA Lane ,Middlewich,CW10 0JG,United Kingdom	The Science Park,Brooks Lane ,Middlewich,CW10 0JG,United Kingdom	Centec International,EA,Brooks Lane ,Middlewich,CW10 0JG,United Kingdom	Brooks Lane ,Middlewich,CW10 0JG,United Kingdom
To Other Countries	16 07 08	Yes	4.06	wastes containing oil	R1	M	Weighted	Abroad	Recyfuel,,	Engis,,...B4480,Belgium	Recyfuel,, Engis,,...B4480,Belgium	Engis,,...B4480,Belgium
To Other Countries	16 07 09	Yes	19.42	wastes containing other dangerous substances	R1	M	Weighted	Abroad	Recyfuel,,	Engis,,...B4480,Belgium	Recyfuel,, Engis,,...B4480,Belgium	Engis,,...B4480,Belgium

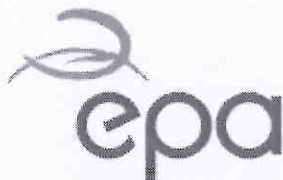
Transfer/Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Licence/Permit No of Next Destination Facility Haz Waste: Name and Licence/Permit No of Next Destination Facility Non Haz Waste: Address of Recoverer/Disposer	Haz Waste: Address of Next Destination Facility Non Haz Waste: Address of Recoverer/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	16 07 09	Yes	9.53	wastes containing other dangerous substances	D8	M	Weighed	Abroad	REVATECH SA, Zoning Industriële D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriële D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning Industriële D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriële D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	16 07 09	Yes	24.15	wastes containing other dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821760	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	16 09 04	Yes	3.0	oxidising substances, not otherwise specified	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821760	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	16 10 01	Yes	55.89	aqueous liquid wastes containing dangerous substances	R1	M	Weighed	Abroad	Recyfuel, Moerdijk	Engis, B4480, Belgium	Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium
To Other Countries	16 10 01	Yes	0.37	aqueous liquid wastes containing dangerous substances	R4	M	Weighed	Abroad	Remondis Production GmbH, WML0707M01	Brunnenstrasse 138, DE 44536, Lunen, Germany	Remondis Production GmbH, WML0707M01 Brunnenstrasse 138, DE 44536, Lunen, Germany	Brunnenstrasse 138, DE 44536, Lunen, Germany
To Other Countries	17 03 01	Yes	0.69	bituminous mixtures containing coal tar	R1	M	Weighed	Abroad	Recyfuel, Moerdijk	Engis, B4480, Belgium	Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium
To Other Countries	17 05 03	Yes	0.83	soil and stones containing dangerous substances	R1	M	Weighed	Abroad	Recyfuel, Moerdijk	Engis, B4480, Belgium	Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium
To Other Countries	17 05 03	Yes	2.04	soil and stones containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821760	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	17 05 03	Yes	0.34	soil and stones containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821760	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
Within the Country	17 05 04	No	820.04	soil and stones other than those mentioned in 17 05 03	R5	M	Weighed	Offsite in Ireland	Greensiar, W0178-02	Ballynagran, Co. Meath, Ireland	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	18 01 01	No	0.09	chemicals consisting of or containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821760	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	18 01 06	Yes	2.12	chemicals consisting of or containing dangerous substances	R1	M	Weighed	Abroad	Recyfuel, Moerdijk	Engis, B4480, Belgium	Recyfuel, Engis, B4480, Belgium	Engis, B4480, Belgium
To Other Countries	18 01 06	Yes	35.5	chemicals consisting of or containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821760	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	18 01 07	No	4.22	chemicals other than those mentioned in 18 01 06	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821760	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, The Netherlands	B.V.1412/149, Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands	Industrieterrein - Seaport M152, Vlasweg 12, 4782 PW Moerdijk, Netherlands

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz Waste - Address of Next Destination Facility Non-Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used				
To Other Countries	18 02 01	No	0.13 sharps except (18 02 02)		R1	M	Weighted	Abvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	18 02 05	Yes	0.82 chemicals consisting of or containing dangerous substances		R6	M	Weighted	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	18 02 08	No	0.97 02 07 medicines other than those mentioned in 18 02 07		R6	M	Weighted	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	19 02 05	Yes	8.94 sludges from physicochemical treatment containing dangerous substances		R3	M	Weighted	Nehlsen GmbH & Co., A-4187HH, Neiderlassung Moerdijk, The Netherlands	Neiderlassung Nehlsen-Plimp, Betriebsstätte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Nehlsen GmbH & Co., A-4187HH, Neiderlassung Moerdijk, The Netherlands	Neiderlassung Nehlsen-Plimp, Betriebsstätte Bremen, Louis-Krages Strasse 10, Bremen, Germany
To Other Countries	19 03 05	No	5.97 stabilised wastes other than those mentioned in 19 03 04		D5	M	Weighted	IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D-23923 Seimtsdorf, Germany	Ihenberg 1, D-23923 Seimtsdorf, Germany	IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D-23923 Seimtsdorf, Germany	Ihenberg 1, D-23923 Seimtsdorf, Germany
To Other Countries	19 09 04	No	3.45 spent activated carbon		R1	M	Weighted	Abvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D-23923 Seimtsdorf, Germany	Ihenberg 1, D-23923 Seimtsdorf, Germany
To Other Countries	19 12 11	Yes	9.87 other wastes (including mixtures of materials) from mechanical treatment of waste containing dangerous substances		D5	M	Weighted	IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D-23923 Seimtsdorf, Germany	Ihenberg 1, D-23923 Seimtsdorf, Germany	IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D-23923 Seimtsdorf, Germany	Ihenberg 1, D-23923 Seimtsdorf, Germany
To Other Countries	20 01 19	Yes	3.5 pesticides		R1	M	Weighted	Abvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	20 01 25	No	0.69 edible oil and fat		R1	M	Weighted	Abvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Recyfuel, Engels, B4480, Belgium	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	20 01 26	Yes	2.42 oil and fat other than those mentioned in 20 01 25		R1	M	Weighted	Recyfuel, Engels, B4480, Belgium	Recyfuel, Engels, B4480, Belgium	Recyfuel, Engels, B4480, Belgium	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	20 01 28	Yes	0.02 oil and fat other than those mentioned in 20 01 25		R1	M	Weighted	Abvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Recyfuel, Engels, B4480, Belgium	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	20 01 28	No	0.07 paint, inks, adhesives and resins other than those mentioned in 20 01 27		R1	M	Weighted	Abvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Recyfuel, Engels, B4480, Belgium	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	20 01 29	Yes	0.56 detergents containing dangerous substances		R1	M	Weighted	Recyfuel, Engels, B4480, Belgium	Recyfuel, Engels, B4480, Belgium	Recyfuel, Engels, B4480, Belgium	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	20 01 29	Yes	26.4 detergents containing dangerous substances		R6	M	Weighted	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	REVA TECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium

Transfer/Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Licence/Permit No of Next Destination Facility Name and Address of Next Destination Facility Non-BEL/REG: Address of Recover/Disposer	Licence/Permit No of Next Destination Facility Name and Address of Next Destination Facility Non-BEL/REG: Address of Recover/Disposer	Name and Licence / Permit No. and Address of the Recovering/Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination of the Waste (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	20 01 29	Yes	21.57	detergents containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 1412/14149, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 1412/14149, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	20 01 32	No	1.62	01 31 medicines other than those mentioned in 20	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Alvalstoffen Terminal Moerdijk B.V., 1412/14149, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 1412/14149, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	19 10 06	No	1243.0	19 10 05 other fractions other than those mentioned	R5	M	Weighed	Abroad	BAUER Umwelt GmbH, 1,86529 Schrobenhausen, Germany	1,86529 Schrobenhausen, Germany	BAUER Umwelt GmbH, 1,86529 Schrobenhausen, Germany	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	08 01 12	No	0.03	waste paint and varnish other than those mentioned in 08 01 11	R3	M	Weighed	Abroad	PHS Group, EA	Block B, Western Industrial Estate Caerphilly, CF83 1XH, United Kingdom	PHS Group, EA	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands
To Other Countries	11 01 09	Yes	2.98	sludges and filter cakes containing dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	11 01 09	Yes	14.24	sludges and filter cakes containing dangerous substances	R6	M	Weighed	Abroad	REVATECH SA, IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D 23923 Selmsdorf, Germany	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D 23923 Selmsdorf, Germany	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	11 01 09	Yes	25.47	sludges and filter cakes containing dangerous substances	D5	M	Weighed	Abroad	IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D 23923 Selmsdorf, Germany	Ihenberg 1, D 23923 Selmsdorf, Germany	IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D 23923 Selmsdorf, Germany	Ihenberg 1, D 23923 Selmsdorf, Germany
To Other Countries	13 05 03	Yes	6.97	interceptor sludges	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	13 05 03	Yes	33.16	interceptor sludges	D8	M	Weighed	Abroad	Recyfuel, Engis, Belgium	Engis, Belgium	Nehlsen GmbH & Co. A-4187HH, Neiderfassing	Engis, Belgium
To Other Countries	13 05 03	Yes	2.79	interceptor sludges	R3	M	Weighed	Abroad	4187HH	Neiderfassing Nehlsen-Pimp, Betriebsstätte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderfassing Nehlsen-Pimp, Betriebsstätte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderfassing Nehlsen-Pimp, Betriebsstätte Bremen, Louis-Krages Strasse 10, Bremen, Germany
To Other Countries	13 05 03	Yes	2.02	interceptor sludges	R1	M	Weighed	Abroad	Recyfuel, Engis, Belgium	Engis, Belgium	Recyfuel, Engis, Belgium	Engis, Belgium
To Other Countries	13 07 01	Yes	11.19	fuel oil and diesel	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Alvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	16 10 02	No	18.62	aqueous liquid wastes other than those mentioned in 16 10 01	R1	M	Weighed	Abroad	Recyfuel, Engis, Belgium	Engis, Belgium	Recyfuel, Engis, Belgium	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	16 10 02	No	115.01	aqueous liquid wastes other than those mentioned in 16 10 01	R6	M	Weighed	Abroad	REVATECH SA, IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D 23923 Selmsdorf, Germany	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, IAG Ihenberger Abfallentsorgungsgesellschaft mbH, Ihenberg 1, D 23923 Selmsdorf, Germany	Zoning 'Industrial D'Ehein, B 4480 ENGIS, Belgium

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Licence/Permit No of Next Destination Facility Haz Waste: Name and Licence/Permit No of Recover/Disposer Non Haz Waste: Address of Recover/Disposer	Haz Waste: Address of Next Destination Facility Non Haz Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recoverer/Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	19 03 04	Yes	2859.71	wastes marked as hazardous, partly (20) stabilised	D8	M	Weighed	Abroad	Terracon GmbH, Hovesstrasse, 20539 Hamburg, Germany	74-76 Hovesstrasse, 20539 Hamburg, Germany	74-76 Hovesstrasse, 20539 Hamburg, Germany	
Within the Country	19 12 02	No	900.0	ferrous metal	R4	M	Weighed	Offsite in Ireland	A1 Metal, WMP007d	Acragar, Mountmellick, Co. Laois, Ireland		
To Other Countries	16 10 01	Yes	27.56	aqueous liquid wastes containing dangerous substances	D8	M	Weighed	Abroad	REVATECH SA,	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	REVATECH SA, Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, Belgium
To Other Countries	15 01 04	No	83.36	metallic packaging	R3	M	Weighed	Abroad	Delta Containers Direct Ltd.,	Preston Street, Manchester, M1 7BB, United Kingdom		
To Other Countries	15 01 04	No	20.78	metallic packaging	R3	M	Weighed	Abroad	Global Recycling Solutions Ltd.,	Cook House, Brunel Ct, Newark, NG24 2FB, United Kingdom		
Within the Country	19 02 99	No	44450.0	wastes not otherwise specified	D8	M	Weighed	Offsite in Ireland	Ringsend WWTW,	Pigeon House Road, Ringsend, Dublin 4, Ireland		

* Select a row by clicking the Description of Waste then click the details button



Environmental Protection Agency

| PRTR# : W0192 | Facility Name : Rilta Environmental Limited | Filename : AER Returns Workbook 2014.xlsm | Return Year : 2014 |

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.18

REFERENCE YEAR	2014
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1. FACILITY IDENTIFICATION

Parent Company Name	Rilta Environmental Limited
Facility Name	Rilta Environmental Limited
PRTR Identification Number	W0192
Licence Number	W0192-03

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Block 402, Grant Drive
Address 2	Greenogue Business Park
Address 3	Rathcoole
Address 4	
Country	Ireland
Coordinates of Location	-8.48281 51.8695
River Basin District	IEEA
NACE Code	3832
Main Economic Activity	Recovery of sorted materials
AER Returns Contact Name	Colm Hussey
AER Returns Contact Email Address	colm.hussey@rilta.ie
AER Returns Contact Position	Facility Manager
AER Returns Contact Telephone Number	01 401 8024
AER Returns Contact Mobile Phone Number	01 401 8000
AER Returns Contact Fax Number	01 401 8080
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	70
User Feedback/Comments	No particular reason for variances.
Web Address	www.rilta.ie

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
5(a)	Installations for the recovery or disposal of hazardous waste
5(c)	Installations for the disposal of non-hazardous waste
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	
Have you been granted an exemption ?	
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

Guidance on waste imported/accepted onto site

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	Yes
--	-----

[Link to previous years emissions data](#)

PRTR# : W0192 | Facility Name : Rilita Environmental Limited | Return Year : 2014

31/3/2015 09:27

4.1 RELEASES TO AIR

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

POLLUTANT		RELEASERS TO AIR				
No. Annex II	Name	M/C/E	METHOD		QUANTITY	
			Method Code	Designation or Description	T (Total) KG/Year	F (Fugitive) KG/Year
					0.0	0.0
					0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

POLLUTANT		RELEASERS TO AIR				
No. Annex II	Name	M/C/E	METHOD		QUANTITY	
			Method Code	Designation or Description	T (Total) KG/Year	F (Fugitive) KG/Year
					0.0	0.0
					0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

POLLUTANT		RELEASERS TO AIR				
Pollutant No.	Name	M/C/E	METHOD		QUANTITY	
			Method Code	Designation or Description	T (Total) KG/Year	F (Fugitive) KG/Year
					0.0	0.0
					0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

Additional Data Requested from Landfill operators

For the purposes of the National Inventory on Greenhouse Gases, landfill operators are requested to provide summary data on landfill gas (Methane) flared or utilised on their facilities to accompany the figures for total methane generated. Operators should only report their Net methane (CH4) emission to the environment under T(Total) KG/yr for Section A: Sector specific PRTR pollutants above. Please complete the table below:

Landfill: Rilita Environmental Limited

Please enter summary data on the quantities of methane flared and / or utilised

Total estimated methane generation (as per site model)	M/C/E	METHOD		Facility Total Capacity m3 per hour
		Method Code	Designation or Description	
Methane flared	0.0			N/A
Methane utilised in engine/s	0.0			0.0 (Total Flaring Capacity)
Net methane emission (as reported in Section A above)	0.0			0.0 (Total Utilising Capacity)

4.3 RELEASES TO WASTEWATER OR SEWER

[Link to previous years emissions data](#)

PRTR# : W0192 | Facility Name : Rita Environmental Limited | Filename : AER Returns Workbook :

SECTION A : PRTR POLLUTANTS

No. Annex II	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	QUANTITY		
						T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
17	Arsenic and compounds (as As)	M	MAB	Averaged Measured Result multiplied by the discharge volume	3.97	3.97	0.0	0.0
19	Chromium and compounds (as Cr)	M	IMAB	Averaged Measured Result multiplied by the discharge volume	6.72	6.72	0.0	0.0
20	Copper and compounds (as Cu)	M	MAB	Averaged Measured Result multiplied by the discharge volume	3.42	3.42	0.0	0.0
23	Lead and compounds (as Pb)	M	MAB	Averaged Measured Result multiplied by the discharge volume	0.899	0.899	0.0	0.0
22	Nickel and compounds (as Ni)	M	MAB	Averaged Measured Result multiplied by the discharge volume	4.31	4.31	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING POLLUTANT EMISSIONS (as required in your Licence)

Pollutant No.	Name	M/C/E	Method Code	Method Used Designation or Description	Emission Point 1	QUANTITY		
						T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
238	Ammonia (as N)	M	MAB	Averaged Measured Result multiplied by the discharge volume	23039.44	23039.44	0.0	0.0
303	BOD	M	MAB	Averaged Measured Result multiplied by the discharge volume	4571.65	4571.65	0.0	0.0
306	COD	M	MAB	Averaged Measured Result multiplied by the discharge volume	59273.28	59273.28	0.0	0.0
308	Detergent (as MBAS)	M	MAB	Averaged Measured Result multiplied by the discharge volume	28.263	28.263	0.0	0.0
324	Mineral oils	M	MAB	Averaged Measured Result multiplied by the discharge volume	4.94	4.94	0.0	0.0
240	Suspended Solids	M	MAB	Averaged Measured Result multiplied by the discharge volume	1121.35	1121.35	0.0	0.0
343	Sulphate	M	MAB	Averaged Measured Result multiplied by the discharge volume	4558.42	4558.42	0.0	0.0
206	Benzene & toluene & xylene (combined)	M	MAB	Averaged Measured Result multiplied by the discharge volume	1.56	1.56	0.0	0.0

* Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

5. ONSITE TREATMENT & OFFSITE TRANSFERS OF WASTE | PRTR#: W0192 | Facility Name : Rilia Environmental Limited | Filename : AER Returns Workbook 2014.xlsm | Return Year : 2014 | Please enter all quantities on this sheet in Tonnes

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste / Destination Facility / License/Permit No of Next Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recoverer / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used				
To Other Countries	02 07 04	No	96.9	materials unsuitable for consumption or processing	R10	M	Weighted	Abroad	Industriepark 6,D-27777, Genderkeese, Germany Krombacher Strabe 42-46,57223, Keruztal - Krombach,, Germany	REVATECH SA,,Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium
To Other Countries	02 07 04	No	24.68	materials unsuitable for consumption or processing	R1	M	Weighted	Abroad	Lindenschmidt KG Umweltservice,,	REVATECH SA,,Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium
To Other Countries	06 01 06	Yes	459.3	other acids	R6	M	Weighted	Abroad	REVATECH SA,,	REVATECH SA,,Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium
To Other Countries	06 02 04	Yes	97.14	sodium and potassium hydroxide	R6	M	Weighted	Abroad	REVATECH SA,,	REVATECH SA,,Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium
To Other Countries	06 02 04	Yes	24.42	sodium and potassium hydroxide	R5	M	Weighted	Abroad	REVATECH SA,,	REVATECH SA,,Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium
To Other Countries	05 01 03	Yes	13.065	tank bottom sludges	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	REVATECH SA,,Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium	Zoning 'Industrial D'Ehein,B 4480 ENGIS,,,...,Belgium
To Other Countries	06 05 02	Yes	227.38	sludges from on-site effluent treatment containing dangerous solutions	D9	M	Weighted	Abroad	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Festsstoffkonditionierung,783/240406	3-7+31 Gottlieb-Daimler Strasse,DE 33334, Guterslo,,Germany	3-7+31 Gottlieb-Daimler Strasse,DE 33334, Guterslo,,Germany
To Other Countries	07 05 13	Yes	13.272	solid wastes containing dangerous substances	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152, Viasweg 12,4782 PW Moerdijk,,The Netherlands	Industrieterrein - Seaport M152, Viasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	07 06 99	No	9.62	wastes not otherwise specified	R1	M	Weighted	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152, Viasweg 12,4782 PW Moerdijk,,The Netherlands	Industrieterrein - Seaport M152, Viasweg 12,,4782 PW Moerdijk,Netherlands
To Other Countries	08 01 11	Yes	449.451	paint and varnish containing organic solvents or other dangerous substances	R3	M	Weighted	Abroad	Nehlsen GmbH & Co.,A-4187HH	Neiderlassung Nehlsen-Plimp, Betriebsstatte Bremen,Louis-Krages Strasse 10,Bremen,Germany	Neiderlassung Nehlsen-Plimp, Betriebsstatte Bremen,Louis-Krages Strasse 10,Bremen,Germany
To Other Countries	09 01 01	Yes	9.62	water-based developer and activator solutions	R4	M	Weighted	Abroad	Remondis Production GmbH,WML0707M01	Brunnenstrasse 138,DE 44536, Lunen,,Germany	Brunnenstrasse 138,DE 44536, Lunen,,Germany
To Other Countries	10 01 01	No	117.84	Boiler Ash	R5	M	Weighted	Abroad	Lafarge Cement UK,P0052704A	Lafarge Activit� Pl�tre,,rue Marcel Demouque,500,Zone du P�le Technologique Agro Parc,F-84915 Avignon Cedex 9,France	rue Marcel Demouque,500,Zone du P�le Technologique Agro Parc,F-84915 Avignon Cedex 9,France

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Licence/Permit No of Next Destination Facility Haz. Waste: Name and Licence/Permit No of Recover/Disposer	Haz. Waste: Address of Next Destination Facility Non Haz. Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Depositor (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	M/Method Used					
To Other Countries	11 01 09	Yes	92.92	sludges and filler cakes containing dangerous substances	R5	M	Weighed	Abroad	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Feststoffkonditionierung,783/240406 3-7-31 Gottlieb-Daimler Strasse,DE 33334, Guterslo.,Germany Holcim SA,437977764,Rue des Fabriques,2,Obourg,B7034, Belgium	3-7-31 Gottlieb-Daimler Strasse,DE 33334, Guterslo.,Germany Rue des Fabriques,2,Obourg,B7034, Belgium	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Feststoffkonditionierung,783/240406 3-7-31 Gottlieb-Daimler Strasse,DE 33334, Guterslo.,Germany Holcim SA,437977764,Rue des Fabriques,2,Obourg,B7034, Belgium	3-7-31 Gottlieb-Daimler Strasse,DE 33334, Guterslo.,Germany Rue des Fabriques,2,Obourg,B7034, Belgium
To Other Countries	13 02 08	Yes	667.98	other engine, gear and lubricating oils	R9	M	Weighed	Abroad	Holcim SA,437977764	Fabriques,2,Obourg,B7034, Belgium	Zimmermann Sonderabfallentsorgung und Verwertung & Co KG Feststoffkonditionierung,783/240406 3-7-31 Gottlieb-Daimler Strasse,DE 33334, Guterslo.,Germany Holcim SA,437977764,Rue des Fabriques,2,Obourg,B7034, Belgium	Rue des Fabriques,2,Obourg,B7034, Belgium
To Other Countries	13 03 01	Yes	2.2	insulating or heat transmission oils containing PCBs	D14	M	Weighed	Abroad	SITA Decontamination,D/PMVC/O 1F28/33629	Westvaardijk 97, Grimberge n, 1850, Netherlands	Westvaardijk 97, Grimbergen, 1850, Netherlands	Westvaardijk 97, Grimbergen, 1850, Netherlands
To Other Countries	13 03 07	Yes	303.97	mineral-based non-chlorinated insulating and heat transmission oils	R9	M	Weighed	Abroad	Midland Oil Refinery,GP31355D	Shelah Road,,Halesowen,B63 3PN,United Kingdom	Shelah Road,,Halesowen,B63 3PN,United Kingdom	Shelah Road,,Halesowen,B63 3PN,United Kingdom
To Other Countries	13 07 01	Yes	21.8	fuel oil and diesel	R9	M	Weighed	Abroad	Centec International,EA	The Science Park, Brooks Lane, Middlewich,CW10 0JG,United Kingdom	Brooks Lane, Middlewich,CW10 0JG,United Kingdom	Brooks Lane, Middlewich,CW10 0JG,United Kingdom
To Other Countries	13 07 03	Yes	62.255	other fuels (including mixtures)	R9	M	Weighed	Abroad	Centec International,EA	The Science Park, Brooks Lane, Middlewich,CW10 0JG,United Kingdom	Brooks Lane, Middlewich,CW10 0JG,United Kingdom	Brooks Lane, Middlewich,CW10 0JG,United Kingdom
To Other Countries	14 06 03	Yes	171.837	other solvents and solvent mixtures	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Viasweg 12,4782 PW Moerdijk,,The Netherlands	Industrieterrein - Seaport M152,Viasweg 12,4782 PW Moerdijk,,The Netherlands	Industrieterrein - Seaport M152,Viasweg 12,4782 PW Moerdijk,,The Netherlands
To Other Countries	15 02 02	Yes	37.1	absorbents, filler materials (including oil filters not otherwise specified), wiping cloths, protective clothing contaminated by dangerous substances	R1	M	Weighed	Abroad	Alvalstoffen Terminal Moerdijk B.V.,821780	Industrieterrein - Seaport M152,Viasweg 12,4782 PW Moerdijk,,The Netherlands	Industrieterrein - Seaport M152,Viasweg 12,4782 PW Moerdijk,,The Netherlands	Industrieterrein - Seaport M152,Viasweg 12,4782 PW Moerdijk,,The Netherlands
Within the Country	16 01 07	Yes	78.38	oil filters	R4	M	Weighed	Offsite in Ireland	Felix Gormely,Co. Cavan,Ireland	Upper,Crossdoney,,Co. Cavan,Ireland	Upper,Crossdoney,,Co. Cavan,Ireland	Upper,Crossdoney,,Co. Cavan,Ireland
To Other Countries	16 02 09	Yes	7.55	transformers and capacitors containing PCBs	R4	M	Weighed	Abroad	SITA Decontamination,D/PMVC/O 1F28/33629	Westvaardijk 97, Grimbergen, 1850, Netherlands	Westvaardijk 97, Grimbergen, 1850, Netherlands	Westvaardijk 97, Grimbergen, 1850, Netherlands
To Other Countries	16 05 04	Yes	6.5	gases in pressure containers (including halons) containing dangerous substances	R3	M	Weighed	Abroad	Greenway,Co. Wick,Ireland	Street,Bootee,Liverpool,L208 JB,United Kingdom	Street,Bootee,Liverpool,L208 JB,United Kingdom	Street,Bootee,Liverpool,L208 JB,United Kingdom
To Other Countries	16 05 04	Yes	6.5	gases in pressure containers (including halons) containing dangerous substances	R3	M	Weighed	Abroad	PHS Group,EA	Block B,Western Industrial Estate,Caerphilly,CF83 1XH,United Kingdom	Block B,Western Industrial Estate,Caerphilly,CF83 1XH,United Kingdom	Block B,Western Industrial Estate,Caerphilly,CF83 1XH,United Kingdom

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste : Name and Licence/Permit No of Next Destination Facility Eg. Waste Name and Licence/Permit No of Recover/Disposer	Haz. Waste : Address of Next Destination Facility Non Haz. Waste: Address of Recover/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (to be filled in by the Responsible HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	16 05 04	Yes	29.887	gases in pressure containers (including halons) containing dangerous substances	D10	M	Weighted	Abroad	Remondis Production GmbH, WML/0707M01	Brunnenstrasse 138, DE 44536, Lunen, Germany	Remondis Production GmbH, WML/0707M01, Brunnenstrasse 138, DE 44536, Lunen, Germany	Brunnenstrasse 138, DE 44536, Lunen, Germany
To Other Countries	16 05 06	Yes	70.198	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands	PW Moerdijk, Netherlands
To Other Countries	16 05 06	Yes	95.639	laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals	D10	M	Weighted	Abroad	AGR mbh - RZR Herten, ..	Im Erschebruch 11, 45699, Herten, Germany	Im Erschebruch 11, 45699, Herten, Germany	Im Erschebruch 11, 45699, Herten, Germany
To Other Countries	16 06 01	Yes	3923.468	lead batteries	R4	M	Weighted	Abroad	HJ Enkthoven & Sons, BL5598	Darley Dale Smelter, South Darley, Derbyshire, DE4 2LP United Kingdom	Neiderlassung Nehlsen-Plimp Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany	Neiderlassung Nehlsen-Plimp Betriebsstatte Bremen, Louis-Krages Strasse 10, Bremen, Germany
To Other Countries	16 06 01	Yes	407.783	lead batteries	R4	M	Weighted	Abroad	S.A.R Recycling Ltd.	Units 1 - 2 Pelham Ind Est, Manby Road, Immingham, DN402LF, United Kingdom	S.A.R Recycling Ltd., units 1 - 2 Pelham Ind Est, Manby Road, Immingham, DN402LF, United Kingdom	units 1 - 2 Pelham Ind Est, Manby Road, Immingham, DN402LF, United Kingdom
Within the Country	16 06 02	Yes	2.757	Ni-Cd batteries	R4	M	Weighted	Offsite in Ireland	Electrical Waste Ireland, Permit No. WFP-DS-09-0012-01	Jordanstown drive, Unit 648 Greenogue Business Park, Rathcoole, Co. Dublin, Ireland	Jordanstown Drive, Unit 648, Greenogue Business Park, Rathcoole Co Dublin, Ireland	Jordanstown Drive, Unit 648, Greenogue Business Park, Rathcoole Co Dublin, Ireland
Within the Country	16 06 02	Yes	3.106	Ni-Cd batteries	R4	M	Weighted	Offsite in Ireland	KMK Metals, W0113-04	Greenogue Business Park, Rathcoole, Co. Dublin, Ireland	04, Cappincur Ind Est, Daingean Road, Tullamore, Co. Offaly, Ireland	Cappincur Ind Est, Daingean Road, Tullamore, Co. Offaly, Ireland
Within the Country	16 06 04	No	5.99	alkaline batteries (except 16 06 03)	R4	M	Weighted	Offsite in Ireland	Electrical Waste Ireland, Permit No. WFP-DS-09-0012-01	Dublin, Ireland	Recyfuel, .., Engis, .., B4480, Belgium	Engis, .., B4480, Belgium
Within the Country	16 06 04	No	3.032	alkaline batteries (except 16 06 03)	R4	M	Weighted	Offsite in Ireland	KMK Metals, W0113-04	Cappincur Ind Est, Daingean Road, Tullamore, Co. Offaly, Ireland	Orion B.V., 18/07/2937, De Steven, 25, AX Drachten, 9206, Netherlands	De Steven, 25, AX Drachten, 9206, Netherlands
Within the Country	16 06 05	No	0.698	other batteries and accumulators	R4	M	Weighted	Offsite in Ireland	Electrical Waste Ireland, Permit No. WFP-DS-09-0012-01	Greenogue Business Park, Rathcoole, Co. Dublin, Ireland	Recyfuel, .., Engis, .., B4480, Belgium	Engis, .., B4480, Belgium
Within the Country	16 06 05	No	0.418	other batteries and accumulators	R4	M	Weighted	Offsite in Ireland	KMK Metals, W0113-04	Cappincur Ind Est, Daingean Road, Tullamore, Co. Offaly, Ireland	Recyfuel, .., Engis, .., B4480, Belgium	Engis, .., B4480, Belgium

Transfer Destination	European Waste Code	Hazardous	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Licence/Permit No or Next Destination Facility Name and Licence/Permit No of Receiver/Disposer	Haz Waste : Address of Next Destination Facility Non-Haz Waste: Address of Receiver/Disposer	Name and License / Permit No. and Address of Final Receiver / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination i.e. Final Recovery / Disposal Site (HAZARDOUS WASTE ONLY)
						M/C/E	Method Used					
To Other Countries	16 08 07	Yes	71.42	spent catalysts contaminated with dangerous substances	R4	M	Weighed	Abroad	Sabin Metal West Corporation, ..	15, Twelfth Avenue East US ND58801, Williston, North Dakota, United States	Afvalstoffen Terminal Moerdijk B.V., 14/12/149, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, .., Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	16 10 01	Yes	129.98	aqueous liquid wastes containing dangerous substances	D8	M	Weighed	Abroad	REVATECH SA, ..	Zoning Industriale D'Ehein, B 4480 ENGIS, .., Belgium	REVATECH SA, .., Zoning Industriale D'Ehein, B 4480 ENGIS, .., Belgium	Zoning Industriale D'Ehein, B 4480 ENGIS, .., Belgium
To Other Countries	16 10 01	Yes	463.86	aqueous liquid wastes containing dangerous substances	D10	M	Weighed	Abroad	Sava GmbH & Co.,	Osterweute Ce25541, Bruns buttel, .., Germany	Osterweute Ce25541, Bruns buttel, .., Germany	Osterweute Ce25541, Bruns buttel, .., Germany
To Other Countries	16 10 01	Yes	51.751	aqueous liquid wastes containing dangerous substances	R1	M	Weighed	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, .., The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, .., Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	17 03 01	Yes	41.0	bituminous mixtures containing coal tar	R1	M	Weighed	Abroad	Afvalstoffen Terminal Moerdijk B.V., 14/12/149	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, .., The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, .., Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands
To Other Countries	17 05 03	Yes	5875.0	soil and stones containing dangerous substances	D5	M	Weighed	Abroad	Terracon GmbH, ..	74-76 Hovestrasse, 20539 Hamburg, .., Germany	Hovestrasse, 20539 Hamburg, .., Germany	74-76 Hovestrasse, 20539 Hamburg, .., Germany
Within the Country	17 05 04	No	565.0	soil and stones other than those mentioned in 17 05 03	R5	M	Weighed	Offsite in Ireland	Greenstar, W0178-02	Landfill, Kertstown, Co. Meath, .., Ireland	Landfill, Kertstown, Co. Meath, .., Ireland	Landfill, Kertstown, Co. Meath, .., Ireland
Within the Country	17 05 04	No	3096.54	soil and stones other than those mentioned in 17 05 03	R5	M	Weighed	Offsite in Ireland	Greenstar, W0178-02	Wicklow, .., Ireland	Wicklow, .., Ireland	Wicklow, .., Ireland
To Other Countries	17 06 01	Yes	253.697	insulation materials containing asbestos	D1	M	Weighed	Abroad	Heiko Neumann Entsorgungsbetrieb, ..	Deponie Reesen GmbH & Co. KG, Johann - Sebastian - Bach - Strabe 60, 39288, Burg, Germany	Deponie Reesen GmbH & Co. KG, Johann - Sebastian - Bach - Strabe 60, 39288, Burg, Germany	Deponie Reesen GmbH & Co. KG, Johann - Sebastian - Bach - Strabe 60, 39288, Burg, Germany
To Other Countries	17 06 05	Yes	5990.06	construction materials containing asbestos	D1	M	Weighed	Abroad	GEG mbH, EGO108	Bimohler Strasse, 57a, Grossenaspel, 2 4623, Germany	GEG mbH, EGO108 Bimohler Strasse, 57a, Grossenaspel, 2 4623, Germany	Strasse, 57a, Grossenaspel, 2 4623, Germany
To Other Countries	17 06 05	Yes	2.06	construction materials containing asbestos	R11	M	Weighed	Abroad	Inertam, ..	471 RTE de Canteleit EST, 40110 Morcenx, Landes, .., France	Inertam, .., 471 RTE de Canteleit EST, 40110 Morcenx, Landes, .., France	471 RTE de Canteleit EST, 40110 Morcenx, Landes, .., France
To Other Countries	17 09 03	Yes	127.11	other construction and demolition wastes (including mixed wastes) containing dangerous substances	D5	M	Weighed	Abroad	IAG Ihlenberger Abfallentsorgungsgesellschaft mbH, ..	Ihlenberg 1, D 23923 Selmsdorf, .., Germany	IAG Ihlenberger Abfallentsorgungsgesellschaft mbH, .., Ihlenberg 1, D 23923 Selmsdorf, .., Germany	Ihlenberg 1, D 23923 Selmsdorf, .., Germany
To Other Countries	18 01 06	Yes	27.459	chemicals consisting of or containing dangerous substances	R1	M	Weighed	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, .., The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, .., Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, Netherlands

Transfer Destination	European Waste Code	Quantity (Tonnes per Year)	Description of Waste	Waste Treatment Operation	Method Used		Location of Treatment	Haz. Waste Licence/Permit No of Next Destination Facility Licence/Permit No of Next Destination Facility Licence/Permit No of Next Destination Facility	Haz. Waste Destination Facility Name and Address Non-Haz. Waste: Address of Recoverer/Disposer	Name and License / Permit No. and Address of Final Recoverer / Disposer (HAZARDOUS WASTE ONLY)	Actual Address of Final Destination (i.e. Recovery or Disposal Site) (HAZARDOUS WASTE ONLY)
					M/C/E	I/E					
To Other Countries	18 01 07	80.182	chemicals other than those mentioned in 18 01 06	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Afvalstoffen Terminal Moerdijk B.V. 821780, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	
To Other Countries	19 02 05	60.966	sludges from physico/chemical treatment containing dangerous substances	R1	M	Weighted	Abroad	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	
Within the Country	19 02 99	57505.0	wastes not otherwise specified	D8	M	Weighted	Offsite in Ireland	Ringsend WWTW, 4, Ireland	Road, Ringsend, Dublin 4, Ireland		
To Other Countries	19 10 02	924.31	non-ferrous waste	R4	M	Weighted	Abroad	A1 Metal, WMPO07d	Acragar, Mountmellick, Co. Laois, Ireland		
To Other Countries	19 10 06	3.5	other fractions other than those mentioned in 19 10 05	R5	M	Weighted	Abroad	TOMRA Sorting GmbH,	Technikum, Otto-Hahn-Strasse 4, Mulheim-Karlich, 56218, Germany	Afvalstoffen Terminal Moerdijk B.V. 821780, Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	
Within the Country	19 12 11	10.32	other wastes (including mixtures of materials) from mechanical treatment of waste containing dangerous substances	R1	M	Weighted	Offsite in Ireland	Afvalstoffen Terminal Moerdijk B.V., 821780	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	Industrieterrein - Seaport M152, Viasweg 12, 4782 PW Moerdijk, The Netherlands	
To Other Countries	19 12 11	126.9	other wastes (including mixtures of materials) from mechanical treatment of waste containing dangerous substances	R5	M	Weighted	Abroad	Delta Containers Direct Ltd.,	Street, Manchester, Marchest Street, Manchester, M188D B, United Kingdom	Preston Street, Manchester, M188D B, United Kingdom	
To Other Countries	20 01 19	12.2	pesticides	D10	M	Weighted	Abroad	AGR mbh - RZR Herten,	im Emscherbruch 11, 45699, Herten, Germany	im Emscherbruch 11, 45699, Herten, Germany	
To Other Countries	20 01 27	112.0	paint, inks, adhesives and resins containing dangerous substances	R1	M	Weighted	Abroad	Geocycle S.A.,	Rue de Couriere 49, B7181, Senefte, Belgium	Rue de Couriere 49, B7181, Senefte, Belgium	
To Other Countries	20 01 27	1002.3	dangerous substances	R1	M	Weighted	Abroad	Recyfuel,	Engis, B4480, Belgium	Engis, B4480, Belgium	
To Other Countries	19 05 04	2258.7	wastes marked as hazardous, party (20) stabilised	D8	M	Weighted	Abroad	Terracon GmbH,	74-76 Hovestrasse, 20539 Hamburg, Germany	74-76 Hovestrasse, 20539 Hamburg, Germany	

* Select a row by double-clicking the Description of Waste then click the delete button

APPENDIX G

Bund Integrity Testing Report



Rilta Environmental Ltd.

**Bund Integrity Testing
at Block 402,
Greenogue Business Park,
Rathcoole, Co. Dublin**

November 2013

Revision: B

TOBIN CONSULTING ENGINEERS



REPORT

PROJECT:

Bund Integrity Testing

**Block 402, Greenogue Business
Park, Rathcoole, Co. Dublin**

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DOCUMENT AMENDMENT RECORD

Client:	Rilta Environmental Ltd.
Project:	6731 – Bund Testing
Title:	Bund Integrity Testing

PROJECT NUMBER: 6731				DOCUMENT REF:6731/Rev A			
Revision	Description & Rationale	Originated	Date	Checked	Date	Authorised	Date
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B	Additional Testing	MN	191113	ST	191113	DG	191113
A	Bund Integrity Testing	MN	180213	ST	190213	DG	190213
TOBIN Consulting Engineers							

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Appendix A

Figure 1 – Bund / Tank Locations for testing (Block 402, Greenogue Business Park)

Appendix B

Block 402- CCTV Drainage Inspection Report
AJ – MHF-11 – CCTV Drainage Inspection Report
Pipework between outdoor Bund & internal sump – Hydrostatic Test Results

1 INTRODUCTION

Tobin Consulting Engineers (hereafter referred to as TOBIN) have been commissioned by Rilta Environmental Ltd. to carry out Bund Integrity Testing at their facility at Block 402, Greenogue Business Park, Rathcoole, Co. Dublin under the requirements of the site's EPA Waste Licence (EPA Waste Licence Reg. No. W0192-03).

TOBIN proposed that over a period amenable to facility operations hydrostatic testing, CCTV survey and structural survey would be carried out on the specified bunds and areas.

A CCTV survey of the site drainage was carried out by Rilta staff on 31/05/12. A structural survey of the buildings outlined for assessment at the site was carried out by a TOBIN Engineer on Friday, 24th August 2012.

Hydrostatic testing of a number of bunded areas and underground settlement tanks commenced on Saturday, 25th September and concluded on Monday, 27th August 2012.

Areas / Bunds for testing identified within Block 402, Greenogue Business Park include:

- Area / Bund No. 1: Contaminated Soil Storage Building
- Area / Bund No. 2: Asbestos Storage Building
- Area / Bund No. 3: Outdoor Bunded Tank Area
- Area / Bund No. 4: Indoor Oil Bund
- Area / Bund No. 5: Indoor Chemical Bund
- Area / Bund No. 6: Underground Tanks (Settlement Tanks (3No.) & Wet Wells (2No.))
- Area / Bund No. 7: Site Drainage Network
- Area / Bund No. 8: Brokerage Quarantine Area, Portable Bund
- Area / Bund No. 9: Indoor PH Plant Bund
- Area / Bund No. 10: Drum Division Sump
- AJ – MHF-11: CCTV Drainage Inspection
- Pipework between Outdoor bund & Internal sump

TOBIN carried out preliminary inspections of the bunds and areas listed above and made assessments as to the necessity/suitability of each for hydrostatic testing or structural assessment. A detailed bund location map (Figure 1) is contained in Appendix A.

2 METHODOLOGY

It was proposed that over a period when the facility was non-operational, liquid levels within the overground bunds and underground tanks would be monitored, following preparatory works, for a three day period (preferably over a weekend). Any subsequent fluctuation in levels over this period would indicate if the integrity of each bund is intact.

2.1 METHODOLOGY FOR TESTING AT BLOCK 402, GREENOGUE BUSINESS PARK

A methodology for the testing of individual bunds and tanks within Block 402 is detailed below. The locations of the areas tested at Block 402 are shown in Figure 1 in Appendix A.

2.1.1 Contaminated Soil Storage Building (Area / Bund No. 1)

A structural survey was carried out by a TOBIN Engineer on the Contaminated Soil Storage Building at Block 402, on Friday, 24th August 2012, located as shown on Figure 1 of Appendix A. This building is designated as an area for the storage of contaminated soil material.

The survey consisted of a visual assessment of all walls, floors and ramps within the building.

2.1.2 Asbestos Storage Building (Area / Bund No. 2)

A CCTV survey was carried out on all drainage pipework associated with the Asbestos Storage Building at Block 402, to ensure the integrity of the pipes and associated valves. The location of the valve connection from this building to the site drainage network is shown on Figure 1.

A structural survey was carried out by a TOBIN Engineer on the Asbestos Storage Building on Friday, 24th August 2012, located as shown on Figure 1 of Appendix A. This building is designated as an area for the storage of contaminated soil material.

The survey consisted of a visual assessment of all walls, floors and ramps within the building.

2.1.3 Outdoor Bunded Tank Area (Area / Bund No. 3)

It was proposed to carry out a hydrostatic test on the Outdoor Concrete Bund at the Tank Area on the Block 402 site, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was allowed to sit for one day to allow the concrete walls and base to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.4 Indoor Oil Bund (Area / Bund No. 4)

It was proposed to carry out a hydrostatic test on the Indoor Oil Bund in the Hydrocarbon Waste Treatment Building on the Block 402 site, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was allowed to sit for one day to allow the concrete walls and base to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.5 Indoor Chemical Bund (Area / Bund No. 5)

It was proposed to carry out a hydrostatic test on the Indoor Chemical Bund in the Hydrocarbon Waste Treatment Building on the Block 402 site, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was allowed to sit for one day to allow the concrete walls and base to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.6 Underground Tanks {Settlement Tanks (3No.) and Wet Wells (2No.)} (Area / Bund No. 6)

It was proposed that hydrostatic testing on the Underground Tanks on the Block 402 site, would be carried out over a period when the underground tanks were non-operational.

It was proposed, similar to previous testing events, that 2No. floats would be placed in each of the underground settlement tanks to increase measurement accuracy. A single float was placed in the wet wells, as access constraints impeded the use of additional floats at these locations. Floats were then added to each tank on the Friday of the testing period and the liquid allowed stand for 24hrs to ensure a state of equilibrium.

After the 24hr period had elapsed, the level of the liquid was measured at 24hr intervals over 3 consecutive days. Liquid levels within the tanks were measured using a laser measuring device, ensuring this was only done from a specific marked point above the float.

The exit and entry points to the tanks were closed on the Friday and the internal liquid allowed to stand for a 24hr period. The level of the liquid in each chamber was noted on the Saturday. Further readings were taken on the Sunday and again on the Monday, prior to the recommencement of work at the facility on the Monday afternoon.

2.1.7 Site Drainage Network (Area / Bund No. 7)

It was proposed to carry out a CCTV survey on the entire drainage network and associated valves on the Block 402 site, to ensure the integrity of same. Upon inspection, if any pipework or valves show signs of major deterioration or malfunction they shall be replaced or repaired.

2.1.8 Brokerage Quarantine Area Portable Bund (Area / Bund No. 8)

It was proposed to test the Outdoor Portable Plastic Bund at the Brokerage Quarantine Building on the Block 402 site, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it was be allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out. In this case as the bunds are plastic it would be recommended to replace the bund in the event of a fault or malfunction.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.9 Indoor pH Plant Bund (Area / Bund No. 9)

It was proposed to hydrostatically test the Indoor pH Plant Bund in the Hydrocarbon Waste Treatment Building on the Block 402 site, located as shown in Figure 1 of Appendix A. The bund was thoroughly cleaned out, with any debris and sludge removed from the bund prior to testing.

The bund was then incrementally filled with water to a level that is equal to 25% of the overall capacity of the bund. This was to represent the maximum capacity the bund will be required to hold.

When the bund was full to the required limit it will be allowed to sit for one day to allow the container/bund to absorb any initial water and reach an equilibrium state. After this 24hr period had lapsed, the level of water was measured at 24hr intervals over 3 days.

Further to this testing the bund was inspected by a structural engineer to ensure that any remedial work that is required has been carried out such as protective coating applied or any cracks or faults repaired and sealed to a satisfactory standard.

Please Note: *During this 3 day test period the total drop in water level, after allowing for rainfall and evaporation, should not exceed 1/500th of the average depth of water or 10mm.*

2.1.10 Drum Division Sump (Area / Bund No. 10)

A CCTV survey was carried out on all drainage pipework associated with the Drum Division Sump to ensure the integrity of the pipes and associated valves. The location of the sump is shown on Figure 1 in Appendix A.

3.0 CONTROL

Due to the potential for evaporation in the settlement tanks/bunded areas, a control was put in place (note: where tanks are internal there is no risk of precipitation influencing levels). A container was filled to a specific level with liquid from the Underground Tanks. This control was left beside the internal tanks throughout the testing period. This control provides an indication of the evaporation rate active on the tanks and the influence of any rainfall during the testing period.

Due to the potential for evaporation and precipitation in the Outdoor Concrete Bund, a control was put in place. A container was filled to a specific level with water. This control was left beside the Outdoor Concrete Bund.

These controls provide an indication of the evaporation and precipitation rate active on the bunds both indoors and outdoors.

3.1 FAILURE

Should the structure not satisfy the test, remedial works will be recommended and carried out and the same procedure will be repeated.

3.2 WATER DISPOSAL

Any water used in this procedure will be disposed of through the surface water drainage system on site.

3.3 PROGRAMME FOR TESTING (BLOCK 402)

It was proposed that all testing would be carried out for Block 402 over a 5-day period (ie. from Thursday, 23rd August to Monday, 27th August 2012).

- Day 1: TOBIN staff attended Block 402 on Thursday, 23rd August 2012, before the testing commenced in order to assess all Areas / Bunds for testing and to review the locations of the Areas / Bunds to be tested (with Rilta staff).
- Day 2: Preparation of test areas including the addition of water to containers/bunds where required for hydrostatic testing (with Rilta staff). Levels were taken by TOBIN staff.
- Days 3-5: TOBIN staff attended site on Saturday, 25th August, Sunday, 26th August and Monday, 27th August to take levels at each test location. Levels were taken at the same time each day, weather conditions noted and controls checked.
- A TOBIN Structural Engineer visited site to carry out a structural assessment of the bunds and buildings on Friday, 24th August.

4 RESULTS

4.1 HYDROSTATIC SURVEY RESULTS

Hydrostatic testing was carried out on the Bunded areas & Underground Storage Tanks from Saturday, 25th August to Monday, 27th August 2012.

No fluctuation in liquid level was noted in the bunds or tanks during the first monitoring period Day 1 to Day 2 (25th August – 26th August 2012) and levels remained constant for the second monitoring period Day 2 to Day 3 (26th August – 27th August 2012). Results from the controls showed no variation and were consistent with readings from all storage tanks.

As no fluctuation was noted in liquid levels during the measurement period and the control remained constant, it is determined that all tested bunds and tanks are in good structural condition. No ancillary works are required for these bunds.

4.2 TESTING AT BLOCK 402, GREENOGUE BUSINESS PARK

Testing commenced 'as per methodology' on Saturday, 25th August 2012. Measurements were recorded over three consecutive days and the results were analysed by TOBIN staff. No fluctuation in liquid level was noted at any of the monitoring locations, during any of the daily monitoring events (see results below). The controls for these assessments showed no change, remaining consistent with the results from the daily monitoring.

4.2.1 Contaminated Soil Storage Building (Area / Bund No. 1)

As per methodology a structural survey was carried out by a TOBIN Engineer on the Contaminated Soil Storage Building on Friday, 24th August 2012, located as shown on Figure 1 of Appendix A.

This area is generally used to store contaminated soil. The floor is of a concrete slab with no obvious construction joints. Large areas of the floor were obscured at the time of the survey as the facility was in use. The areas of the floor that were visible, while showing some cosmetic damage due to the scraping of machinery, did not show signs of structural damage such as cracking.

4.2.2 Asbestos Storage Building (Area / Bund No. 2)

As per methodology a structural survey was carried out by a TOBIN Engineer on the Asbestos Storage Building on Friday, 24th August 2012, located as shown on Figure 1 of Appendix A.

This area is generally used to store dry material. The concrete floors have no joints and were found to be in good condition. There is a reinforced concrete wall around the perimeter of the units, this was also found to be in good structural condition. There is a valved drainage system under the floor which is manually released. The drainage system is outlined in detail in section 5.1 of this report.

4.2.3 Outdoor Bunded Tank Area (Area / Bund No. 3)

As per methodology Area / Bund No. 3 was filled with water to an appropriate level (110% tank volume) on Friday 24th August 2012. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Saturday 25th August. Table 4-1 below represents recorded water levels within the bund and control over the

test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds. The overall bund was tested in 3 separate parts (Front, Middle & Rear).

Table 4-1 Bund / Area No. 3 Test Result

Measurement Location	Sat 25 th Aug (Top of bund to water level)	Sun 26 th Aug (Top of bund to water level)	Mon 27 th Aug (Top of bund to water level)	Fluctuation	Pass / Fail
Front of bund					
A, Front Left	114cm	114cm	114cm	0.0cm	Pass
B, Front Right	112cm	112cm	112cm	0.0cm	Pass
C, Rear Left	121cm	121cm	121cm	0.0cm	Pass
D, Rear Right	122cm	122cm	122cm	0.0cm	Pass
Middle of bund					
E, Front Left	125cm	125cm	125cm	0.0cm	Pass
F, Front Right	126cm	126cm	126cm	0.0cm	Pass
G, Rear Left	125cm	125cm	125cm	0.0cm	Pass
H, Rear Right	126cm	126cm	126cm	0.0cm	Pass
Rear of bund					
I, Front Left	120cm	120cm	120cm	0.0cm	Pass
J, Front Right	120cm	120cm	120cm	0.0cm	Pass
K, Rear Left	120cm	120cm	120cm	0.0cm	Pass
L, Rear Right	120cm	120cm	120cm	0.0cm	Pass
Control	21cm	21cm	21cm	0.0cm	Pass

Testing at this location was not impacted by facility operations.

4.2.4 Indoor Oil Bund (Area / Bund No. 4)

As per methodology Area / Bund No. 4 was filled with water to an appropriate level (110% tank volume) on Friday 24th August 2012. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Saturday 25th August. Table 4-2 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Table 4-2 Bund / Area No. 4 Test Result

Measurement Location	Sat 25 th Aug (Top of bund to water level)	Sun 26 th Aug (Top of bund to water level)	Mon 27 th Aug (Top of bund to water level)	Fluctuation	Pass / Fail
A, Front Left	123cm	123cm	123cm	0.0cm	Pass
B, Front Right	124cm	124cm	124cm	0.0cm	Pass
C, Left Centre	124cm	124cm	124cm	0.0cm	Pass
Control	6cm	6cm	6cm	0.0cm	Pass

Testing at this location was not impacted by facility operations.

4.2.5 Indoor Chemical Bund (Area / Bund No. 5)

As per methodology Area / Bund No. 5 was filled with water to an appropriate level (110% tank volume) on Friday 24th August 2012. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Saturday 25th August. Table 4-3 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Table 4-3 Bund / Area No. 5 Test Result

Measurement Location	Sat 25 th Aug (Top of bund to water level)	Sun 26 th Aug (Top of bund to water level)	Mon 27 th Aug (Top of bund to water level)	Fluctuation	Pass / Fail
A, Front Left	134cm	134cm	134cm	0.0cm	Pass
B, Front Right	132cm	132cm	132cm	0.0cm	Pass
C, Rear Right	134cm	134cm	134cm	0.0cm	Pass
D, Rear Left	132cm	132cm	132cm	0.0cm	Pass
Control	6cm	6cm	6cm	0.0cm	Pass

Testing at this location was not impacted by facility operations.

4.2.6 Underground Tanks (Area / Bund No. 6) {Settlement Tanks (3No.) and Wet Wells (2No.)}

As per methodology 2No. floats were placed in each of the Underground Settlement Tanks. A single float was placed in the Wet Wells. Floats were added to each tank on the Friday of the testing period and the liquid allowed stand for 24hrs to ensure a state of equilibrium.

After the 24hr period, the level of the liquid was measured at 24hr intervals over 3 consecutive days. As no fluctuation was noted in tank liquid levels during the measurement period and the

control remained constant, it is determined that the Settlement Tanks and Wet Wells are in good structural condition.

The test commenced on Saturday 25th August. Table 4-4 below represents recorded levels within the tanks and control over the test period.

Table 4-4 Bund / Area No. 6 Test Result

Measurement Location	Sat 25 th Aug (Top of tank to float level)	Sun 26 th Aug (Top of tank to float level)	Mon 27 th Aug (Top of tank to float level)	Fluctuation	Pass / Fail
Settlement Tanks (Front)					
A, Tank 1	5.480m	5.480m	5.480m	0.0cm	Pass
B, Tank 2	1.394m	1.394m	1.394m	0.0cm	Pass
C, Tank 3	5.614m	5.614m	5.614m	0.0cm	Pass
Settlement Tanks (Rear)					
D, Tank 1	5.501m	5.501m	5.501m	0.0cm	Pass
E, Tank 2	1.394m	1.394m	1.394m	0.0cm	Pass
F, Tank 3	5.613m	5.613m	5.613m	0.0cm	Pass
Wet Wells					
G, Well 1	3.681m	3.681m	3.681m	0.0cm	Pass
H, Well 2	3.680m	3.680m	3.680m	0.0cm	Pass
Control	14cm	14cm	14cm	0.0cm	Pass

Testing at this location was not impacted by facility operations.

4.2.7 Site Drainage Network (Area / Bund No. 7)

As per methodology a CCTV survey was carried out on the entire drainage network and associated valves at Block 402 to ensure the integrity of same. The CCTV report is included in Appendix B.

4.2.8 Brokerage Quarantine Area Portable Bund (Area / Bund No.8)

As per methodology Area / Bund No. 8 was filled with water to an appropriate level (110% tank volume) on Friday 24th August 2012. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Saturday 25th August. Table 4-5 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Table 4-5 Bund / Area No. 8 Test Result

Measurement Location	Sat 25 th Aug (Top of bund to water level)	Sun 26 th Aug (Top of bund to water level)	Mon 27 th Aug (Top of bund to water level)	Fluctuation	Pass / Fail
A, Front Left	23cm	23cm	23cm	0.0cm	Pass
B, Front Right	23cm	23cm	23cm	0.0cm	Pass
C, Rear Right	23cm	23cm	23cm	0.0cm	Pass
D, Rear Left	23cm	23cm	23cm	0.0cm	Pass
Control	21cm	21cm	21cm	0.0cm	Pass

Testing at this location was not impacted by facility operations.

4.2.9 Indoor pH Plant Bund (Area / Bund No. 9)

As per methodology Area / Bund No. 4 was filled with water to an appropriate level (110% tank volume) on Friday 24th August 2012. A >24hr absorption period was observed (due to weekend period) to allow the bund walls to become saturated. The test commenced on Saturday 25th August. Table 4-6 below represents recorded water levels within the bund and control over the test period. Various levels were taken for each bund as there was a variation in floor level in some of the bunds.

Table 4-6 Bund / Area No. 9 Test Result

Measurement Location	Sat 25 th Aug (Top of bund to water level)	Sun 26 th Aug (Top of bund to water level)	Mon 2 th Aug (Top of bund to water level)	Fluctuation	Pass / Fail
A, Front Left	31cm	31cm	31cm	0.0cm	Pass
B, Front Right	31cm	31cm	31cm	0.0cm	Pass
C, Rear Right	33cm	33cm	33cm	0.0cm	Pass
D, Rear Left	31cm	31cm	31cm	0.0cm	Pass
Control	6cm	6cm	6cm	0.0cm	Pass

Testing at this location was not impacted by facility operations.

Upon visual assessment of this Bund some leakage was observed at the south western corner of the bund. It is recommended that a structural survey is undertaken and that any remedial works required to repair any faults in the bund are completed. See Photo No. 1 below for location of the suspected fault in the bund.



Photo 1: Suspected fault in Area / Bund No. 9

4.2.10 Drum Division Sump (Area / Bund No. 10)

A CCTV survey was carried out on all drainage pipework associated with the Drum Division Sump to ensure the integrity of the pipes and associated valves. The CCTV report is included in Appendix B.

4.3 ADDITIONAL TESTING

4.3.1 Additional Hydrostatic Pipeline Test October 2013

An additional hydrostatic test was carried out on the section of pipe between the outdoor bunds and sump internal to the Hydrocarbon treatment building known as the sludge return pipe. Upon testing this pipework was deemed to be in good structural condition. The results of this test are included in Appendix B attached.

5 CCTV

5.1 CCTV SURVEY

A CCTV drainage inspection was carried out on May 31st 2013 on behalf of Rilta Environmental Ltd. The Inspection Report is included in Appendix B attached. A further CCTV was then carried out in October 2013 on the section of pipe between AJ & MHF-11 as shown on Figure 1 in Appendix A. Upon inspection it was discovered that there were some faults in the section of pipe between AJ & MHF-11, while these minor faults could be repaired, due to the fact that the pipe runs beneath existing hedging, it would be prudent to relocate the pipe overground next to the building wall.

6 CONCLUSION

The assessment of the bunds / areas after CCTV survey, structural and hydrostatic testing is as follows:

Areas / Bunds for testing identified within Rilta Site, Block 402, Greenogue Business Park include:

- Area / Bund No. 1: Contaminated Soil Storage Building = **PASS**
- Area / Bund No. 2: Asbestos Storage Building = **PASS**
- Area / Bund No. 3: Outdoor Bunded Tank Area = **PASS**
- Area / Bund No. 4: Indoor Oil Bund = **PASS**
- Area / Bund No. 5: Indoor Chemical Bund = **PASS**
- Area / Bund No. 6: Underground Tanks = **PASS**
- Area / Bund No. 7: Site Drainage Network = **PASS**
- Area / Bund No. 8: Brokerage Quarantine Area, Portable Bund = **PASS**
- Area / Bund No. 9: Indoor PH Plant Bund = **PASS**

Remedial Works recommended

- Area / Bund No. 10: Drum Division Sump = **PASS**

APPENDIX A

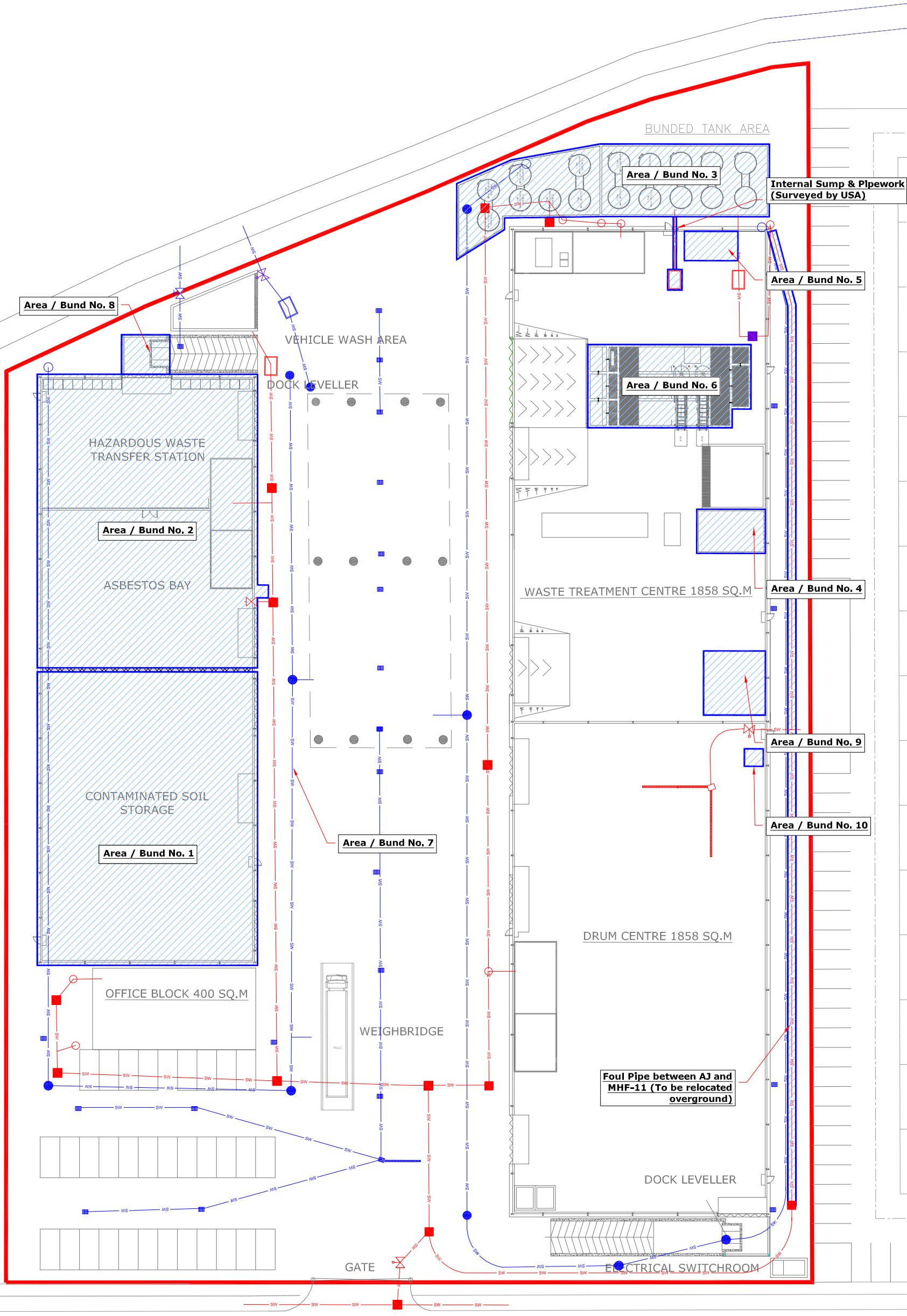
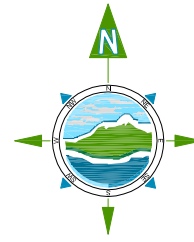
Figure 1: Bund / Tank Locations for Testing
(Block 402, Greenogue Business Park)

TEST AREAS

1. Contaminated Soil Storage Building
2. Asbestos Storage Building
3. Outdoor Bunded Tank Area
4. Indoor Oil Bund
5. Indoor Chemical Bund
6. Underground tanks {Settlement Tanks (3No.) and Wet Wells (2No.)}
7. Site Drainage Network
8. Brokerage Quarantine Area Portable Bund
9. Indoor pH Plant Bund
10. Drum Division Sump
11. Internal Sump & Pipework
12. Foul pipe between AJ & MHF-11

GENERAL LEGEND

- | | | |
|---------------------|------------------|--|
| FACILITY BOUNDARY | TEST AREAS | |
| SURFACE WATER DRAIN | FOUL WATER DRAIN | |
| SW MANHOLE | FOUL MANHOLE | |
| GULLY | SHUT OFF VALVE | |
| ACCESS CHAMBER | INTERCEPTOR | |



NOTES

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
A	28.11.12	ISSUED FOR REPORT	MN	ST

Client:

Project: **BUND INTEGRITY TESTING AT BLOCK 402 GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN**

Title: **BUND / TANK LOCATIONS FOR TESTING**

BLOCK 402 SITE

Scale @ A1:	1:250	
Prepared by:	Checked:	Date:
M. Nolan	S. Tinnelly	July 2012
Project Director:	D. Grehan	

TOBIN Consulting Engineers,
Block 10-4, Blanchardstown Corporate Park,
Dublin 15, Ireland.
tel: +353-(0)1-8030406
fax: +353-(0)1-8030409
e-mail: dublin@tobin.ie
www.tobin.ie

Drawing No.:	Figure 1	Revision:	A
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APPENDIX B

Block 402 - CCTV Drainage Inspection Report
AJ – MHF-11 – CCTV Drainage Inspection Report
Pipework between outdoor Bund & internal sump – Hydrostatic Test
Results



Project-information

Project name: Rilta Environmental	Contract number: 01	Contact: Colm Hussey	Date: 31/05/2012
--------------------------------------	------------------------	-------------------------	---------------------

Client	Rilta Environmental Ltd.
Contact:	Colm Hussey
Position:	
Road	Grant's Drive
Town	Rathcoole, Greenogue Industrial Estate
County	Dublin
Telephone:	
Fax:	
Mobile:	
E-Mail:	

Site	Rilta Environmental limited
Contact:	Colm Hussey
Position:	
Road	Grant's Drive
Town	Block 402, Greenogue Business Park, Rathcoole
County	Dublin
Telephone:	01 401 8000
Fax:	01 401 8080
Mobile:	
E-Mail:	info@rilta.ie

Contractor	Rilta Environmental limited
Contact:	Martin Stehlik
Position:	C.C.T.V. Operator
Road	Grant's Drive
Town	Block 402, Greenogue Business Park, Rathcoole
County	Dublin
Telephone:	01 401 8000
Fax:	01 401 8080
Mobile:	+353 0876185460
E-Mail:	info@rilta.ie



Defect Grade Description

Project name: Rilta Environmental	Contract number: 01	Contact: Colm Hussey	Date: 31/05/2012
--------------------------------------	------------------------	-------------------------	---------------------

1:	<p>Occurrences without damage: for example, laterals, joints etc.</p> <p>NO DEFECTS WERE DETECTED.</p>
2:	<p>Constructional deficiencies or occurrences with insignificant influence to tightness, hydraulic or static pressure of pipe: f.e. wide joints, badly torched intakes, minor deformation of plastic pipes, minor erosions etc.</p> <p>REHABILITATION CAN BE SCHEDULED LONG-TERM.</p>
3:	<p>Constructional deficiencies diminishing static, hydraulic and tightness: f.e. open joints, untorched intakes, cracks, minor drainage obstructions such as calcide build ups, protruding laterals, minor damages to pipe wall, individual root penetrations, corroded pipe walls etc.</p> <p>REHABILITATION IS NECESSARY MEDIUM-TERM WITHIN 3 TO 5 YEARS.</p>
4:	<p>Constructional damages with nonsufficient static safety, hydraulic or tightness: f.e. axial/radial pipebursts, pipe deformations, visually noticeable infiltration/exfiltration, cavities in pipe-wall, severe protruding, laterals severe root penetrations, severe corrosion of pipe wall etc.</p> <p>REHABILITATION PROCEDURE IS URGENT AND HAS TO BE COMPLETED WITHIN 1 TO 2 YEARS. NECESSITY FOR EMERGENCY OPERATIONS HAS TO BE EXAMINED.</p>
5:	<p>Pipe is already or will shortly be impermeable: f.e. collapsed pipe, deeply rooted pipe or other drainage obstructions. Pipe loses water or danger of backwater in basements etc.</p> <p>REHABILITATION IS URGENT AND SHORT-TERM. IN ORDER TO PREVENT FURTHER DAMAGE, NECESSARY TEMPORARY SPOT REPAIR HAS TO BE CONDUCTED ON EMERGENCY LEVEL.</p>



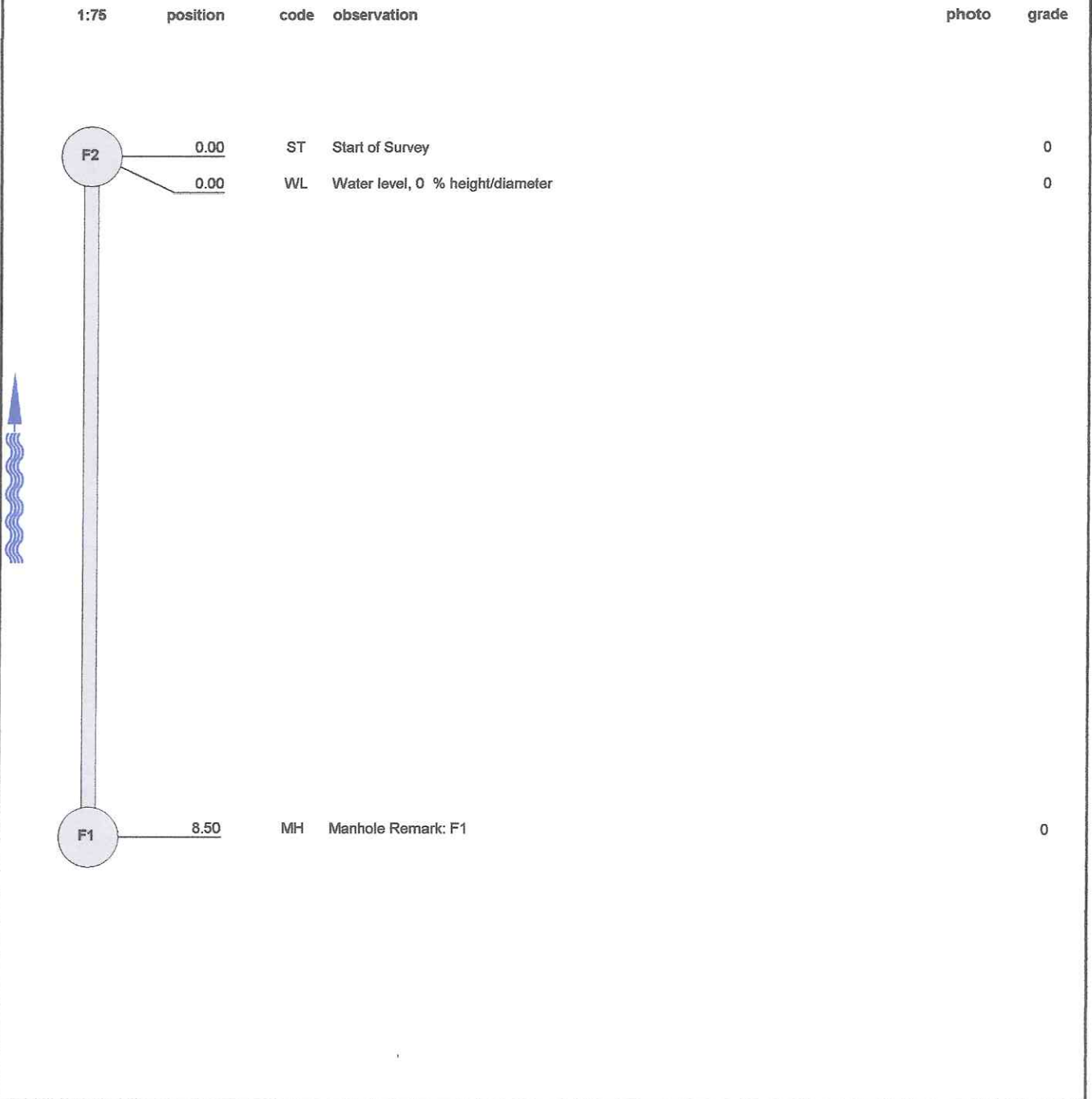
Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 1	PLR: F1 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F2
Place: Greenogue Ind. Est.	District:	end MH: F1
Location: Difficult access	Tape No.:	Total length: 8.5 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:





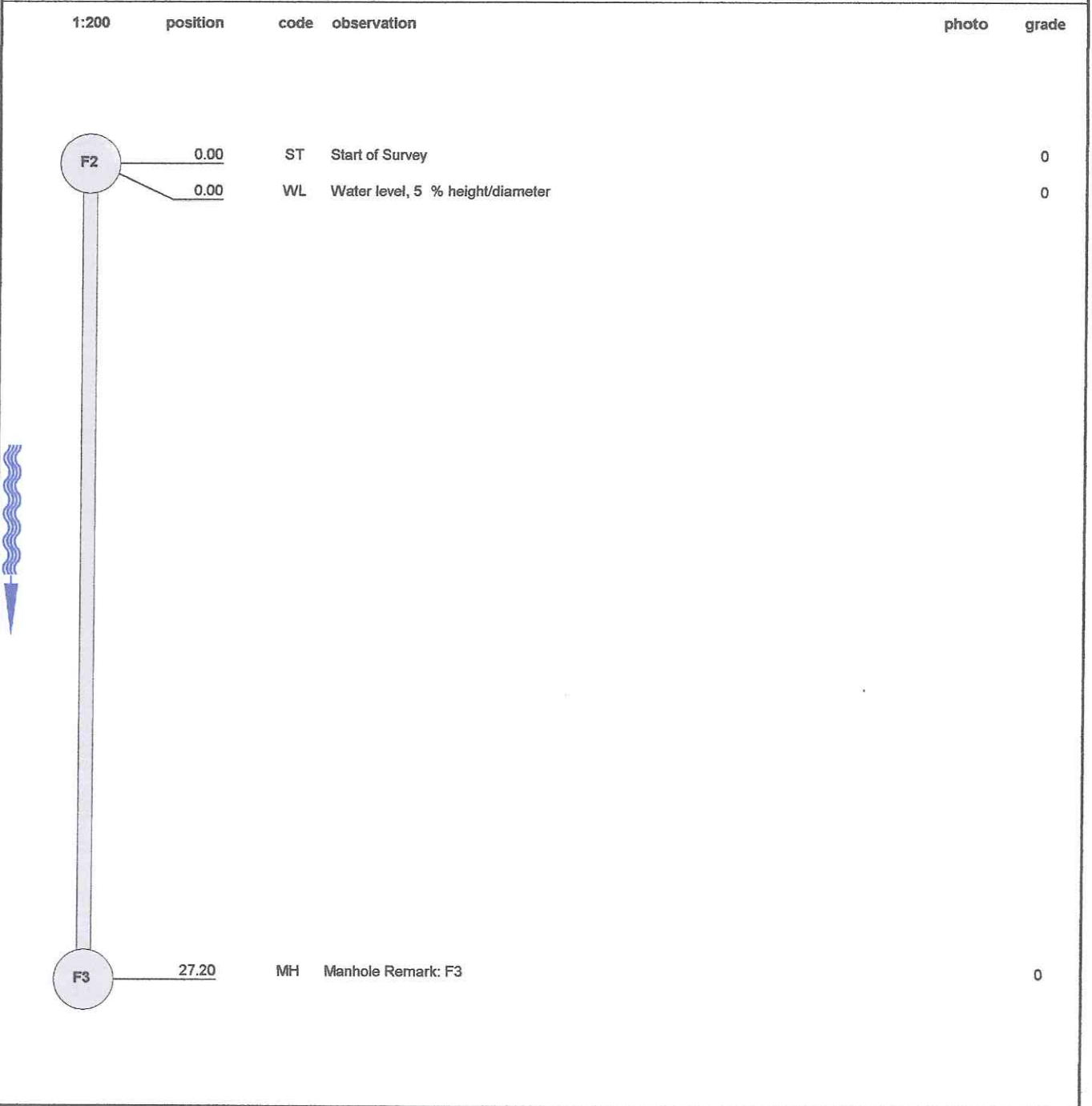
Inspection report

Date: 31/06/2012	Job N°:	Weather: Dry	Operator: MS	section number: 2	PLR: F2 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F2
Place: Greenogue Ind. Est.	District:	end MH: F3
Location: Difficult access	Tape No.:	Total length: 27.2 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:





Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 3	PLR: F3 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F3
Place: Greenogue Ind. Est.	District:	end MH: F4
Location: Difficult access	Tape No.:	Total length: 15 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:125	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	9.00	WL	Water level, 20 % height/diameter		0
	10.50	WL	Water level, 40 % height/diameter		0
	14.00	WL	Water level, 50 % height/diameter		0
	14.00	CU	Camera Underwater		0
	14.00	GO	General Observation:BAD FALL BETWEEN F4 AND F10 IS BACKING UP THE WATER		3
	15.00	MH	Manhole Remark: F4		0



Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 4	PLR: F4 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F4
Place: Greenogue Ind. Est.	District:	end MH: F10
Location: Difficult access	Tape No.:	Total length: 18.5 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining: Category:

Comment:
 Location details:

1:150	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	3.00	WL	Water level, 10 % height/diameter		0
	3.00	GO	General Observation: BAD FALL OF THE PIPE		3
	3.00	GO	Observation:sludge and debris might get lodged at this point		3
	16.00	WL	Water level, 30 % height/diameter		0
	18.50	MH	Manhole Remark: F10		0



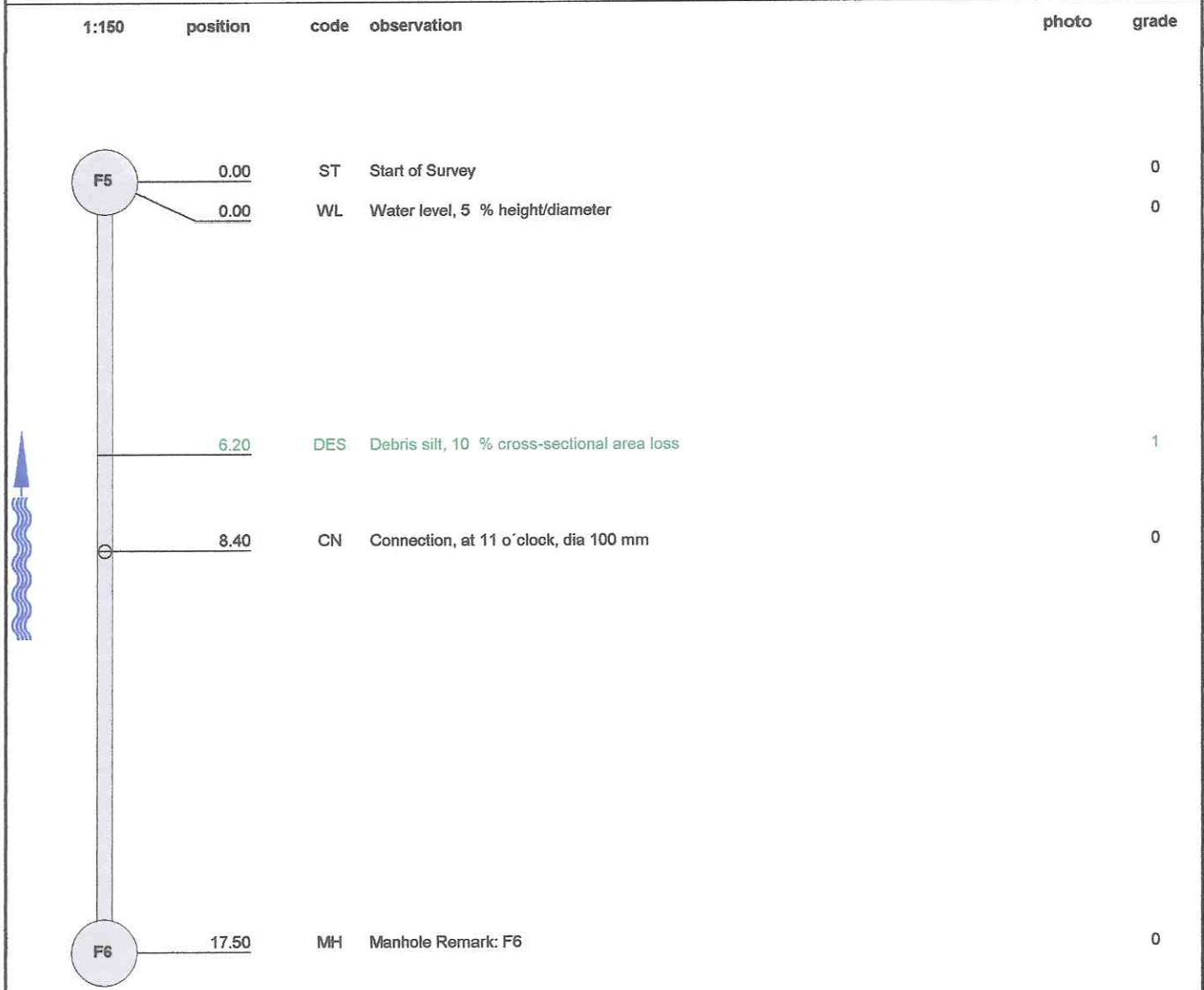
Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 6	PLR: F6 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F5
Place: Greenogue Ind. Est.	District:	end MH: F6
Location: Difficult access	Tape No.:	Total length: 17.5 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:





Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 7	PLR: INTERCEPT.X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F6
Place: Greenogue Ind. Est.	District:	end MH: INTERCEPT.
Location: Difficult access	Tape No.:	Total length: 12.6 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:100	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	1.00	WL	Water level, 10 % height/diameter		0
	2.00	WL	Water level, 20 % height/diameter		0
	3.00	WL	Water level, 40 % height/diameter		0
	4.00	WL	Water level, 50 % height/diameter		0
	4.00	CU	Camera Underwater		0
	4.00	GO	General Observation:BAD FALL IN THE PIPE		3
	12.50	LD	Line of Sewer deviates down, Remark: Approx. 90 deg.		0
	12.60	MH	Manhole Remark: INTERCEPT.		0



Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 8	PLR: F7 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F8
Place: Greenogue Ind. Est.	District:	end MH: F7
Location: Difficult access	Tape No.:	Total length: 39 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:300	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 0 % height/diameter		0
	7.50	WL	Water level, 5 % height/diameter		0
	9.00	WL	Water level, 20 % height/diameter		0
	9.00	GO	General Observation, Remark: PIPE SLIGHTLY DEPRESSED - HOLDING WATER		2
	12.00	WL	Water level, 5 % height/diameter		0
	22.50	CN	Connection, at 10 o'clock, dia 100 mm		0
	23.20	CN	Connection, at 10 o'clock, dia 100 mm		0
	24.70	CN	Connection, at 10 o'clock, dia 100 mm		0
	32.10	CN	Connection, at 11 o'clock, dia 100 mm		0
	37.00	WL	Water level, 30 % height/diameter		0
	37.00	GO	General Observation, Remark: PIPE SLIGHTLY DEPRESSED		2
	39.00	MH	Manhole Remark: F7		0



Inspection report

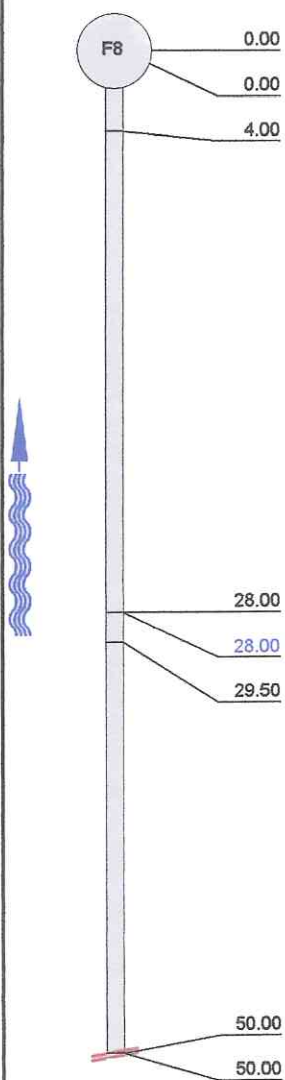
Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 9	PLR: F9 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F8
Place: Greenogue Ind. Est.	District:	end MH: F9
Location: Difficult access	Tape No.:	Total length: 50 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:375	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 10 % height/diameter		0
	4.00	WL	Water level, 5 % height/diameter		0
	28.00	WL	Water level, 20 % height/diameter		0
	28.00	GO	General Observation, Remark: PIPE SLIGHTLY DEPRESSED		2
	29.50	WL	Water level, 5 % height/diameter		0
	50.00	SA	Survey abandoned: END OF CABLE - SECTION TOO LONG		0
	50.00	GO	General Observation: F9 IS BURIED WITHOUT ACCESS		0





Inspection report

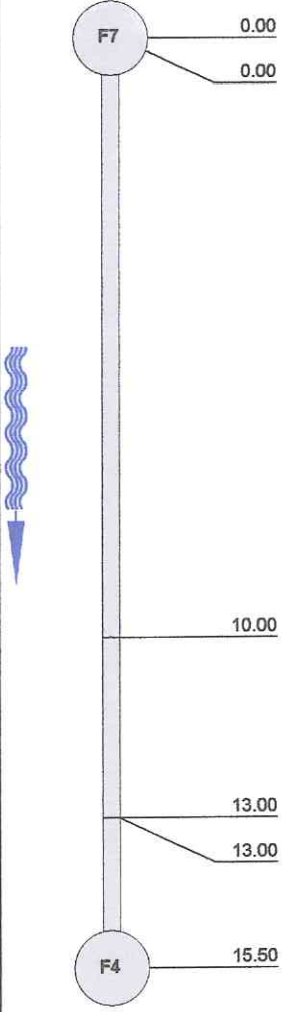
Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 10	PLR: F7 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F7
Place: Greenogue Ind. Est.	District:	end MH: F4
Location: Difficult access	Tape No.:	Total length: 15.5 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Polyvinyl chloride Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:125	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	10.00	WL	Water level, 30 % height/diameter		0
	13.00	WL	Water level, 50 % height/diameter		0
	13.00	CU	Camera Underwater - WATER BACKING UP, BAD FALL BETWEEN F4 AND F10		0
	15.50	MH	Manhole Remark: F4		0



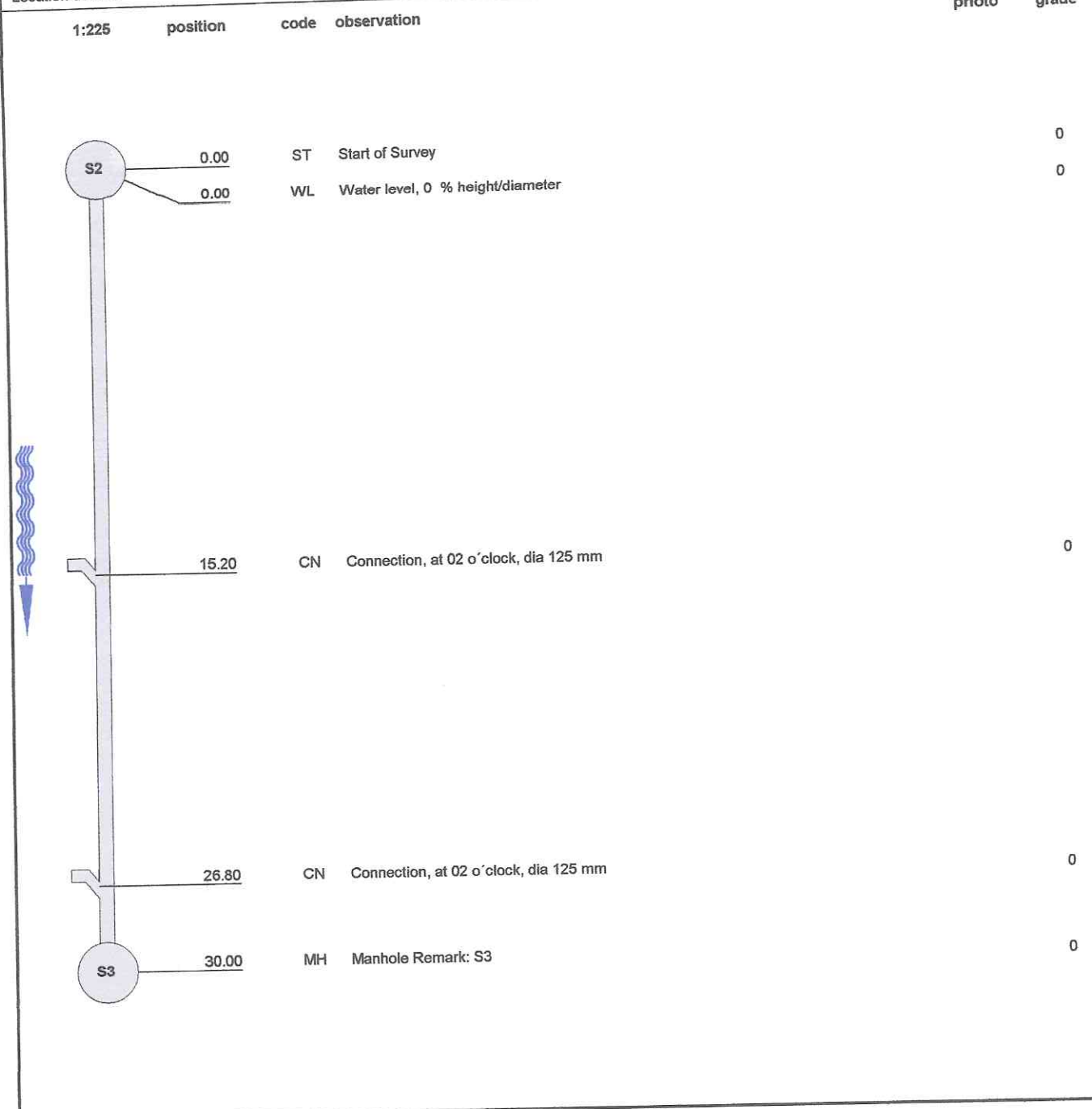


Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 11	PLR: S2 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S2
Place: Greenogue Ind. Est.	District:	end MH: S3
Location: Difficult access	Tape No.:	Total length: 30 m
Purpose: Resurvey	Size/Shape: Circular 200	Material: Vitrified clay
Use: Surface water	Lining:	Pipe length:
Catchment:	Category:	

Comment:
 Location details:





Inspection report

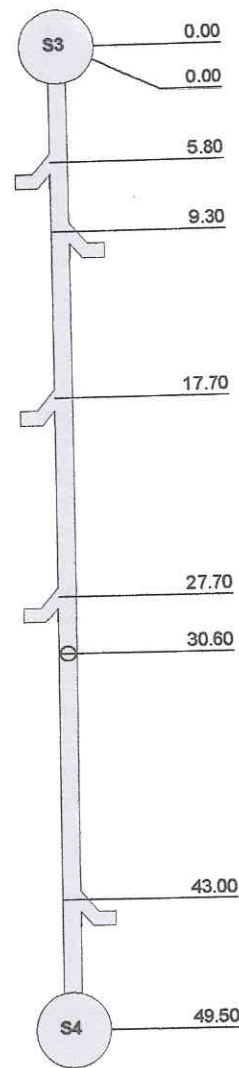
Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 12	PLR: S4 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S3
Place: Greenogue Ind. Est.	District:	end MH: S4
Location: Difficult access	Tape No.:	Total length: 49.5 m

Purpose: Resurvey	Size/Shape: Circular 200
Use: Surface water	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:375	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	5.80	CN	Connection, at 02 o'clock, dia 125 mm		0
	9.30	CN	Connection, at 10 o'clock, dia 125 mm		0
	17.70	CN	Connection, at 02 o'clock, dia 125 mm		0
	27.70	CN	Connection, at 03 o'clock, dia 125 mm		0
	30.60	CN	Connection, at 11 o'clock, dia 125 mm		0
	43.00	CN	Connection, at 10 o'clock, dia 125 mm		0
	49.50	MH	Manhole Remark: S4		0





Inspection report

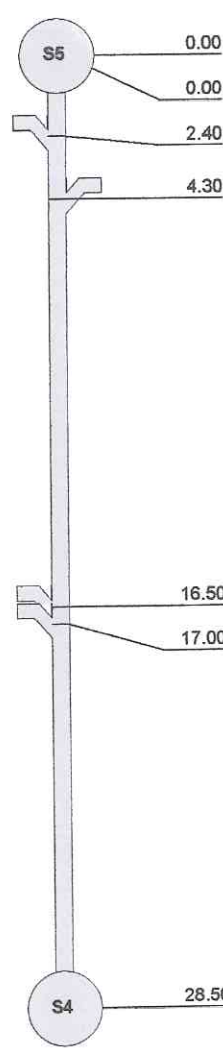
Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 13	PLR: S5 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S5
Place: Greenogue Ind. Est.	District:	end MH: S4
Location: Difficult access	Tape No.:	Total length: 28.5 m

Purpose: Resurvey	Size/Shape: Circular 200
Use: Surface water	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:225	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	2.40	JN	Junction at 02 o'clock, dia 125 mm		0
	4.30	CN	Connection, at 10 o'clock, dia 125 mm		0
	16.50	CN	Connection, at 02 o'clock, dia 125 mm		0
	17.00	CN	Connection, at 02 o'clock, dia 125 mm		0
	28.50	MH	Manhole Remark: S4		0





Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 14	PLR: AJ X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S5
Place: Greenogue Ind. Est.	District:	end MH: AJ
Location: Difficult access	Tape No.:	Total length: 46.2 m

Purpose: Resurvey	Size/Shape: Circular 200
Use: Surface water	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:350	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 0 % height/diameter		0
	19.70	CN	Connection, at 10 o'clock, dia 125 mm		0
	32.80	CN	Connection, at 10 o'clock, dia 125 mm		0
	46.20	CXI	Connection defective, at 10 o'clock, dia 125 mm, intrusion 200 mm	14_5a	4
	46.20	SA	Survey abandoned:CAN'T CONTINUE		0



Inspection photos

Place: Greenogue Ind. Est.	Road: Grant's Drive	Date: 31/05/2012	section number: 14	PLR: AJ X
--------------------------------------	-------------------------------	----------------------------	------------------------------	---------------------



Photo: 14_5a
46.2m, Connection defective, at 10 o'clock, dia 125 mm, intrusion
200 mm



Inspection report

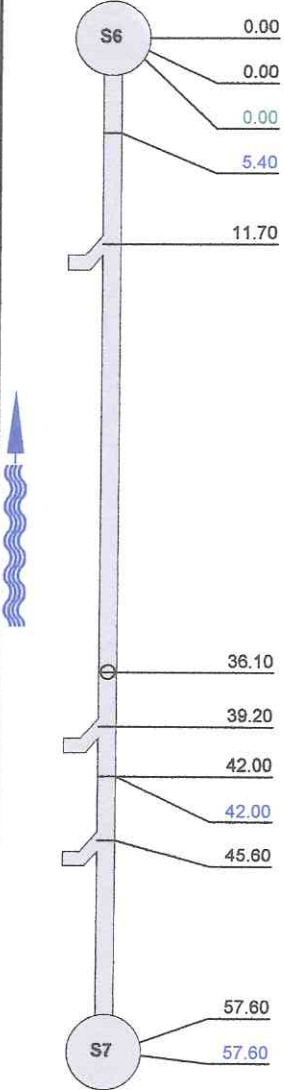
Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 15	PLR: S7 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S6
Place: Greenogue Ind. Est.	District:	end MH: S7
Location: Difficult access	Tape No.:	Total length: 57.6 m

Purpose: Resurvey	Size/Shape: Circular 200
Use: Surface water	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:425	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	0.00	DES	Debris silt, 10 % cross-sectional area loss		1
	5.40	D	Sewer Deformed, 10 %		2
	11.70	CN	Connection, at 03 o'clock, dia 125 mm		0
	36.10	CN	Connection, at 11 o'clock, dia 125 mm		0
	39.20	CN	Connection, at 02 o'clock, dia 125 mm		0
	42.00	WL	Water level, 20 % height/diameter		0
	42.00	GO	General Observation, Remark: PIPE SLIGHTLY DEPRESSED - HOLDING		2
	45.60	CN	Connection, at 03 o'clock, dia 125 mm		0
	57.60	MH	Manhole Remark: S7		0
	57.60	GO	General Observation: MANHOLE BURIED WITHOUT ACCESS		2







Inspection report

Date: 31/05/2012	Job N°:	Weather: Dry	Operator: MS	section number: 16	PLR: S8 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S6
Place: Greenogue Inq. Est.	District:	end MH: S8
Location: Difficult access	Tape No.:	Total length: 65.9 m
Purpose: Resurvey	Size/Shape: Circular 200	
Use: Surface water	Material: Vitrified clay	Pipe length:
Catchment:	Lining:	
	Category:	

Comment:

Location details:

1:500	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 5 % height/diameter		0
	10.90	CN	Connection, at 12 o'clock, dia 125 mm		0
	16.40	CN	Connection, at 09 o'clock, dia 125 mm		0
	22.70	CN	Connection, at 02 o'clock, dia 125 mm		0
	29.20	CN	Connection, at 10 o'clock, dia 125 mm		0
	46.40	CN	Connection, at 10 o'clock, dia 125 mm		0
	51.40	CN	Connection, at 03 o'clock, dia 125 mm		0
	57.30	CN	Connection, at 09 o'clock, dia 125 mm		0
	58.10	CN	Connection, at 02 o'clock, dia 125 mm		0
	58.60	CN	Connection, at 02 o'clock, dia 125 mm		0
	65.90	MH	Manhole Remark: S8		0



Inspection report

Date: 17/12/2012	Job N°:	Weather: Dry	Operator: MS	section number: 17	PLR: S9 X
Present:	Vehicle: Camera van	Camera: Pearpoint	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S8
Place: Greenogue Ind. Est.	District:	end MH: S9
Location: Difficult access	Tape No.:	Total length: 5.8 m

Purpose: Resurvey	Size/Shape: Circular 200
Use: Surface water	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:

Location details:

1:50	position	code	observation	photo	grade
		ST	Start of Survey		0
		WL	Water level, 0 % height/diameter		0
		LL	Line of Sewer deviates left, Remark: Approx. 90 degrees		0
		SA	Survey abandoned - too sharp bend		0



Inspection report

Date: 17/12/2012	Job N°:	Weather: Dry	Operator: MS	section number: 18	PLR: HWTS X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: F5
Place: Greenogue Ind. Est.	District:	end MH: HWTS
Location: Difficult access	Tape No.:	Total length: 10 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Foul	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:75	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 0 % height/diameter		0
	3.00	GO	Emergency shut-off valve		0
	4.30	CN	Connection, at 09 o'clock, dia 125 mm		0
	10.00	MH	Gully trap in HWTS		0



Inspection report

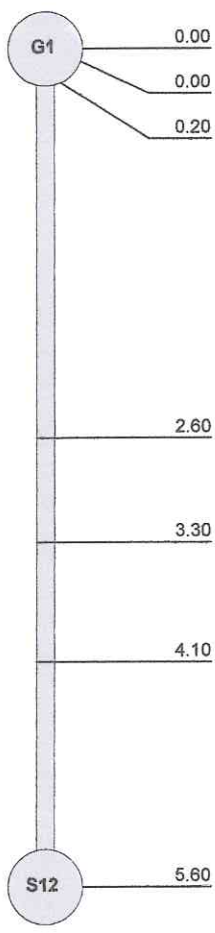
Date: 17/12/2012	Job N°:	Weather: Dry	Operator: MS	section number: 19	PLR: G1 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: G1
Place: Greenogue Ind. Est.	District:	end MH: S12
Location: Difficult access	Tape No.:	Total length: 5.6 m

Purpose: Resurvey	Size/Shape: Circular 125
Use: Surface water	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:50	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 0 % height/diameter		0
	0.20	LL	Line of Sewer deviates left, Remark: Approx. 45 degrees		0
	2.60	LL	Line of Sewer deviates left, Remark: Approx. 45 degrees		0
	3.30	GO	Emergency shut-off valve		0
	4.10	LL	Line of Sewer deviates left, Remark: Approx. 45 degrees		0
	5.60	MH	Manhole Remark: S12		0





Inspection report

Date: 17/12/2012	Job N°:	Weather: Dry	Operator: MS	section number: 20	PLR: S12 X
Present:	Vehicle: Camera van	Camera: Minicam	Preset:	Cleaned: Yes	Grade:

Road: Grant's Drive	Division:	start MH: S12
Place: Greenogue Ind. Est.	District:	end MH: river
Location: Difficult access	Tape No.:	Total length: 3.6 m

Purpose: Resurvey	Size/Shape: Circular 150
Use: Surface water	Material: Vitrified clay Pipe length:
Catchment:	Lining:
	Category:

Comment:
 Location details:

1:50	position	code	observation	photo	grade
	0.00	ST	Start of Survey		0
	0.00	WL	Water level, 0 % height/diameter		0
	3.00	WL	Water level, 10 % height/diameter		0
	3.60	MH	River outfall		0
	3.60	GO	General Observation:river discharge pipe plugged		0

Project-information / Inspection: 1

 Project name :
RILTA ENVIRONMENTAL

Contract Number :

Contact :

 Date :
31/10/2013

Client **Colm Hussey**
 Responsible: **01 4018000**
 Department: **Treatment Division**
 Street: **Grants Drive**
 City, St Zip: **Rathcoole**
 Po Box: **Dublin**
 Telephone:
 Fax:
 Mobile:
 e-mail:

Proj mgr **Colm Hussey**
 Responsible:
 Department: **Rilta Yard Bay 5 Rear**
 Street:
 City, St Zip:
 Po Box:
 Telephone:
 Fax:
 Mobile:
 e-mail:

Contractor **RILTA ENVIRONMENTAL**
 Responsible: **FINTAN DUFFY**
 Department: **CONTRACTS**
 Street: **GREENOGUE INDUSTRIAL ESTATE**
 City, St Zip: **RATHCOOLE**
 Po Box: **DUBLIN**
 Telephone: **01 4018000**
 Fax:
 Mobile: **087 9041052**
 e-mail: **info@rilta.ie**

Inspection report / Inspection: 1

Date : 31/10/2013	Job number :	Weather : Light rain	Sewer category:	Section number : 1	PLR suffix : X
Present :	Vehicle :	Camera :	Preset :	Cleaned : yes	Operator : MICHAEL

Place : Road : Location Inspection	RILTA RATHCOOLE MH20.4 (D/S) MH20.3	Location details: Catchment: Tape number : Pipe length :	311013_1	U/S MH : U/S Depth : D/S MH : D/S Depth :	MH20.4 MH20.3
---	---	---	----------	--	----------------------

Use: Other (state in comments)	Pipe shape : Pipe size : Pipe material : Lining :
Year laid : Purpose : Total length :	Circular 100.00 mm Polyvinyl chloride (PVC)

Comment :

1:798	Position	Code	Observation	MPEG	Photo	Grade
	MH20.4					
	0.00	ST	Start of survey	00:00:34		(Misc) 0
	0.01	WL	Water level, 5% of sewer height			(Serv) 0
	14.76	D	Deformed sewer, 5% of original diameter/height	00:03:07	1_3A	(Struct) 2
	27.49	OJM	Open joint, medium (between 1.0 and 1.5 times the pipe wall thickness) Remarks: SEAL OUT	00:06:31	1_4A	(Struct) 1
	54.96	D	Deformed sewer, 5% of original diameter/height	00:14:48	1_5A	(Struct) 2
	101.30	WL	Water level, 5% of sewer height			(Serv) 0
	101.30	FH	Finish survey			(Misc) 0
	MH20.3					

Structural Defects					Constructional Features				
Service Defects					Miscellaneous Features				
STR no def	STR peak	STR mean	STR total	STR grade	SER no def	SER peak	SER mean	SER total	SER grade
3	20	0.4	41	2	0	0	0	0	1

Inspection pictures / Inspection: 1

Place : RILTA	Road : RATHCOOLE	Date : 31/10/2013	Section number : 1	PLR suffix : X
-------------------------	----------------------------	-----------------------------	------------------------------	--------------------------



Photo: 1_3A, MPEG #: 311013_1, 00:03:07
 14.76m, Deformed sewer, 5% of original diameter/height



Photo: 1_4A, MPEG #: 311013_1, 00:06:31
 27.49m, Open joint, medium (between 1.0 and 1.5 times the pipe wall thickness)

Inspection pictures / Inspection: 1

Place : RILTA	Road : RATHCOOLE	Date : 31/10/2013	Section number : 1	PLR suffix : X
------------------	---------------------	----------------------	-----------------------	-------------------



Photo: 1_5A, MPEG #: 311013_1, 00:14:48
54.96m, Deformed sewer, 5% of original diameter/height



USA Ltd.

**Underground
Surveying and Analysis Ltd.**

Unit 47,
Western Parkway
Business Centre,
Ballymount Rd,
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Tel: 00353 (0)1 4564991
Fax: 00353 (0)1 4564828
email: info@usa-ltd.ie

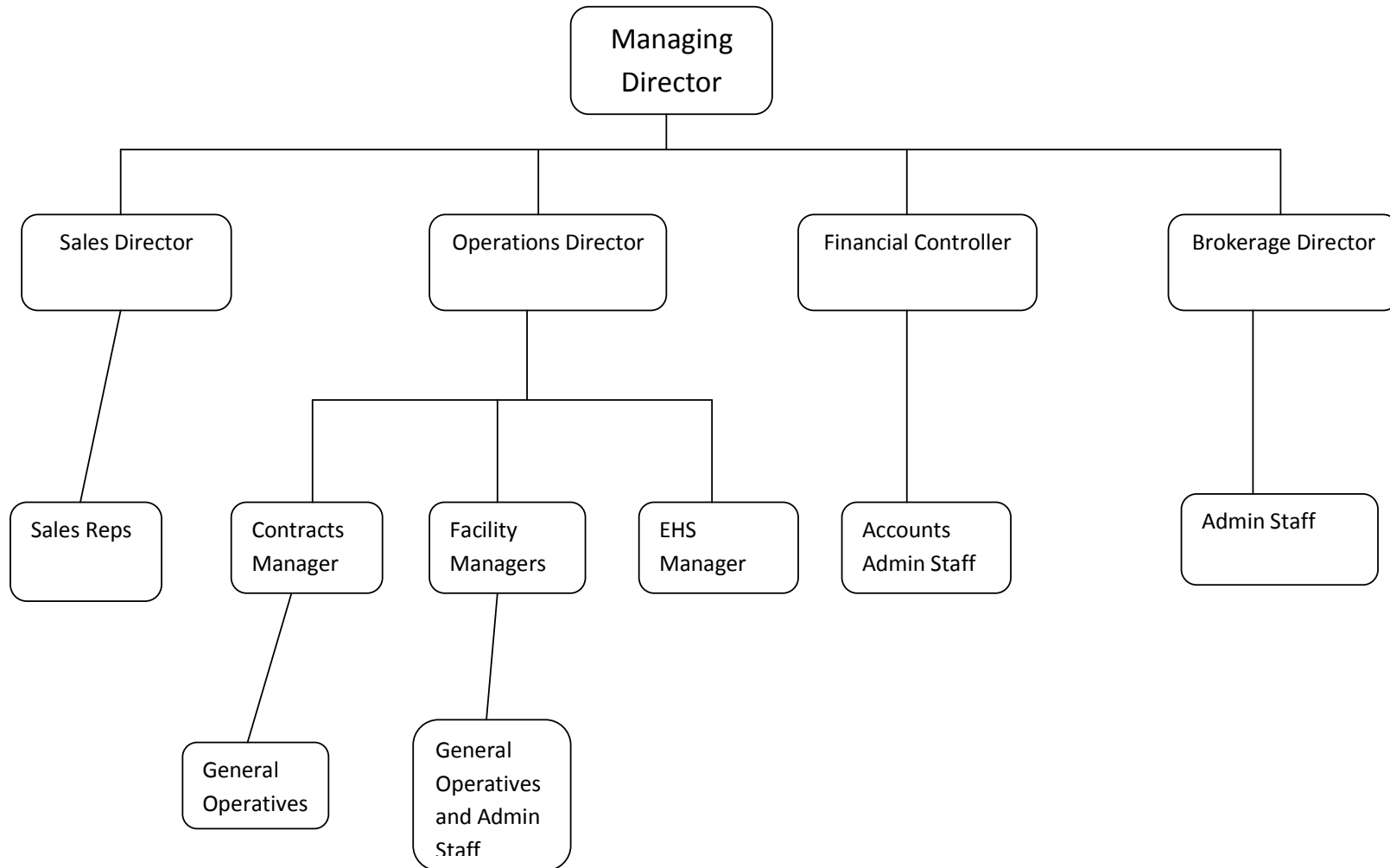
Your Ref:
Our Ref : 7034 / KB / CH

DATE	11-Oct-13		
LOCATION	Rilta, Greenogue Business Park		
OPERATIVES	Derek Tyrrell Sean Burke		
MANHOLE No. 1	Bund	Hydrostatic Pipeline Test	
MANHOLE No. 2	Sump	Location A on attached plan	
SEWER DIAMETER	90		
SEWER MATERIAL	PVC		
SEWER LENGTH	35		
EFFLUENT TYPE		Foul	Storm
			Process
VOLUME OF WATER ADDED	0		
ALLOWABLE WATER LOSS	2.63		
in 30 minute period			
TEST RESULTS		Pass	Fail
		✓	
COMMENTS			
ALLOWABLE WATER LOSS PER METER RUN OF PIPE IN EACH 30 MINUTE PERIOD			
Diameter	No. Of Litres		
150mm	0.075		
160mm	0.080		
200mm	0.100		
225mm	0.113		
300mm	0.150		
375mm	0.188		

APPENDIX H

Environmental Management and Staffing Structure

Rilta Environmental Management Structure



APPENDIX I

Decommissioning Management Plan



DECOMMISSIONING MANAGEMENT PLAN

RILTA ENVIRONMENTAL LTD

GREENOUGE BUSINESS PARK

WASTE LICENCE NO. W0192-03

Prepared For: -

Rilta Environmental Ltd.,
Block 402,
Grant's Drive,
Greenouge Business Park,
Rathcoole,
County Dublin.

Prepared By: -

O' Callaghan Moran & Associates,
Granary House,
Rutland Street,
Cork

January 2014

Project		Decommissioning Management Plan Rilta Environmental Ltd Greenogue		
Client		Rilta Environmental Ltd W00192-03		
Report No	Date	Status	Prepared By	Reviewed By
1950102	21/4/2011	Draft Client Review	Jim O'Callaghan MSc, CEnv, MCIWM, IEMA	Michael Watson MA
	11/5/2011	Final		
	11/05/2012	Final Rev A		
	08/01/2014	Draft Rev B		
	13/01/2014	Draft Rev C		

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1. INTRODUCTION

RILTA Environmental Limited (RILTA) operates an Integrated Waste Management Facility at Block 402, Grant's Drive, Greenogue Business Park, Rathcoole, County Dublin. The facility operates in accordance with a Waste Licence (W0192-03) granted by the Environmental Protection Agency (Agency).

Condition 10.2.1 of the Licence requires RILTA to prepare a Decommissioning Management Plan, which addresses the proposed actions that will be taken in the event of the closure of the facility. RILTA prepared a Decommissioning Management Plan in 2005. In 2001 RILTA commissioned O'Callaghan Moran & Associates (OCM) to prepare the revised Plan.

The ELRA was submitted to the Agency in May 2012. In October 2013 the Agency responded to RILTA stating that the ELRA was not to the Agency's satisfaction and that the following issues need to be addressed:

The Decommissioning Management Plan (May 2012), is not satisfactory for the following reasons:

The DMP should be completed as if the event is unplanned and due to unforeseen circumstances may need to be undertaken by a third party. Taking this into account, the following is required to be included at a minimum in the revised submission:

- Timelines for the completion of closure including the steps outlining how the plan will be executed,
- It is not clear how the 'quantity' (tonnes) figures are calculated. Following, the site visit on the 6th November, 2013, the quantities of waste held on site are in excess of what was used in the initial submission.

Justification for the quantities used is required and in doing so, submit the revised tonnages, should be based on maximum amounts of the waste types including the radioactive material, empty reconditioned drums, oil tanks, empty IBC's, soil, filter sludge, laborator chemicals etc. held on site on a sudden closure scenario. The tonnages provided must be realistic and based on operation practices.

- Costs must be provided for management of the closure, staffing costs, security costs, monitoring, overheads, equipment hire, utilities, and this needs to be included and addressed in the revised plan. These should also be broke out on a quantity x unit rate basis.
- Costs must be provided for the investigation of potential contamination beneath the site. The measures implemented must be considered plausible and contingency must be provided to remediate any potential contamination.
- Full inventory of the raw materials, including lime and other raw materials such as waste oils, treatment chemicals must have a full itemized cost to remove and dispose of off-site included, the quantity of reprocessed oil held on site. In providing the

costing, the tank or otherwise, capacity per raw material/ product must be available, along with the disposal route.

- Full Inventory of plant, equipment and buildings must have a full itemised cost to remove from site must be included in the report whether completed by either Rialta personnel or a third party waste contractor.
- Containers/drums held in the DRC are stated that they will be reconditioned and sold or sent to offsite recycling facilities. This is not factual, as only half of this building has drums that are being sold, with the remaining been waste. This has not been built into the costing and it must be included in the revised DMP.
- Contingency should be included to provide for uncertainty in the cost estimate.

RILTA requested OCM to revise the DMP to take into consideration the Agency's comments. OCM's approach was based on Agency's recently issued draft revised guidance 'Guidance on assessing and costing environmental liabilities' (July 2013)

1.1 Facility Description

The facility is located in the Greenouge Business Park. It encompasses 1.1 hectares and is entirely covered by buildings and concrete paved open yards. The site is bounded to the north by the Griffeen River, to east and west by other lots in the Business Park and to the south by an internal estate road. The elevation is 87.5mOD (Ordnance Datum-OD) and the ground gently slopes in a northerly direction.

The part of the Business Park occupied by the facility was initially developed in ca. 2003. Prior to development, it is understood that the lands were used for agricultural purposes. The RILTA facility was constructed and started operations under a Waste Licence issued by the Agency (W0192-01) in December 2004 which allowed the acceptance of 65,000 tonnes per annum (tpa) of a combination of hazardous waste, commercial waste, construction and demolition waste, industrial sludges and industrial waste.

In June 2007, RILTA applied to the Agency to revise the Waste Licence to approve an increase in the volume of waste that could be accepted to 111, 000 and on-site treatment of waste oils (2000 tpa). The Agency granted the revised Licence (W0192-02) in May 2008. In December 2008, the OEE became aware that processed waste oil was being sold as a product and instructed RILTA to stop this pending a Licence Review.

In January 2009, RILTA applied for a licence review to allow it to sell the processed waste oil as product. A revised Licence (W0192-03), which approves the use of the processed waste oil as a fuel, was granted by the Agency in July 2010.

There is no record of any historic incidents at the facility that could have impacted on soil or groundwater quality and there have been no emission to surface water or waste water which have significantly impacted offsite

1.2 Closure Scenarios

The facility has no defined lifetime and the risk of closure is low. The commercial viability of the facility will be kept under review and, if market conditions dictate the need to close the facility, the Agency and South Dublin County Council will be notified and the DMP will be implemented.

1.3 Closure Plan Update & Review

The Plan will be reviewed and updated annually during the preparation of the Annual Environmental Report. The Plan may also be reviewed based on the impacts of any future on-site incidents that have the potential to affect soil and groundwater.

1.4 Scope of the Plan

The Plan deals with the facility decommissioning and closure, which will involve the removal of all residual consumable materials and wastes, cleaning and removal of all plant and equipment, as well as cleaning of all buildings. Following closure, RILTA may, depending on the future plans for the facility, apply to surrender the Licence.

1.5 Limitations

The assessments of costs associated with the implementation of the DMP are on the information available at the time of the report preparation, including the Agency's draft guidance and may be subject to amendment based on future investigations.

2. SITE EVALUATION

2.1 Operator Performance

2.1.1 Facility Management

The facility is managed by a suitably qualified and experienced Facility Manager and all facility personnel are provided with appropriate training and have the requisite qualifications and experience to complete their assigned tasks. RILTA's Employee Training Programme includes training for all RILTA staff on aspects of the facility activities that could have environmental impacts, which include:

- Tanker Training
- Fire Safety
- Chemical Handling
- Hazardous Chemical Training

2.1.2 Incident History

There have been no incidents (spills, fires, leaks etc) since RILTA began operations at the site that had potential to cause environmental pollution.

2.1.3 Compliance History

The five site inspections carried out between 2011 and 2013 by the Agency identified a total of 13 non-compliances with the Licence conditions, which included

- Surface water gullies and manholes not marked
- Storage of waste in an unbunded area
- Incorrect assignation of EWC codes to waste consigned from the site
- Incorrect EWC codes on waste accepted at the site
- Storage of wastes in an undesignated area
- Incorrect labelling of waste containers
- Failure to track asbestos waste movement within the site
- Incorrect application of EWC codes
- Incorrect reassignment of EWC codes
- Incorrect storage of waste
- Lack of employee awareness on the licence requirements
- Failure to divert or treat drainage from bounded area, and
- Failure to complete full integrity assessment of underground tanks and pipework.

2.1.4 Enforcement History

In October 2009, the Agency successfully prosecuted RILTA for processing waste oils in a manner not authorised by the Licence (W0192-02).

2.2 Environmental Pathways & Sensitivities

2.2.1 Surface Water

Surface water run-off from the roofs and the open yard area, with the exception of the weighbridge and vehicle wash area, is collected in an underground attenuation tank (800m³), which also serves as a firewater retention tank. The water discharges from the tank to the Griffeen River at a controlled rate (maximum of 6 litres/second) via a silt trap and Class 1 oil interceptor. A manually operated valve fitted on the outlet from the interceptor can be closed to retain surface water within the site boundaries in the event of an incident that has the potential to contaminate the run-off.

2.2.2 Geology & Hydrogeology

The subsoils beneath the site are between 2.9 to 3.3 m thick and comprise grey silty CLAY with cobbles and boulders. The site is underlain by Calp limestone, which comprises dark, grey fine-grained argillaceous limestone. The limestone aquifer is Locally Important Aquifer that is productive only in local zones (**LI**). Although the subsoils are poorly permeable, because the thickness is <3m in some areas, the vulnerability of the bedrock aquifer to contamination from the ground surface is considered to be extreme (**E**).

The groundwater monitoring conducted in compliance with the Licence conditions has identified the presence of elevated pH and trace levels of hydrocarbons and some volatile organic compounds (VOC) in the two downgradient groundwater monitoring wells (BH-1 and BH-2). The elevated pH was associated with the installation of the underground concrete storage tanks in the HWTC, and the level has declined over time.

There have not been any incidents at the facility that could be a potential source of the hydrocarbons and VOC detected in BH-1 and BH-2. Although the source of the hydrocarbons and VOC is not known, the levels are not of environmental significance.

2.2.3 Surrounding Land Use

The land immediately surrounding the facility is commercial in nature comprising a mix of, light industrial and commercial activities, including waste treatment and transfer facilities. The closest private dwelling is approximately 1km from the site boundaries.

2.3 Site Processes & Activities

2.3.1 Waste Types & Volumes

The facility is licensed to accept a maximum of 111,000 tonnes per annum which consist of the waste types and quantities specified in Schedule A of the Licence, which include: -

- Commercial and Industrial Non-Hazardous Solids and Sludges and Construction and Demolition Waste (5,000 tpa)
- Hazardous Waste, comprising oil waste, aqueous wastes, contaminated soils and asbestos containing materials and non-specified hazardous wastes, including flammables (106,000 tpa).

2.3.2 Waste Acceptance & Handling Procedures

RILTA has developed a comprehensive set of waste acceptance and handling procedures to ensure that only suitable wastes are accepted and that all waste processing complies with the Licence conditions and the emission limit values specified for the treated effluent discharge to the sewer are achieved.

2.3.3 Emissions

Potential and actual emissions from the facility include: -

- Noise,
- Dust,
- Surface Water,
- Wastewater.

2.4 Site Infrastructure

The site is occupied by four separate buildings the Drum Recover Centre (DRC), the Hydrocarbon Waste Treatment Centre (HWTC), the Hazardous Waste Transfer Station (HWTS) and an Office Block. All of the waste handling buildings are provided with internal bunding. In addition to the processing areas, there is a bunded tank farm containing to the north of the HWTC, weighbridge at the entrance, an electrical room at the southern end of the DRC and a vehicle wash at the north-western site boundary and a fuel storage area. The entire site is either covered with buildings, or paved with concrete and is surrounded by a security fence.

Table 2.1 – Site Infrastructure

Ref	Infrastructure	Details
1	DRC	1,858m ²
2	HWTS	1,859m ²
3	HWTC	1,859m ²
4	Office Block	400m ²
5	Bunded Tank Area (23 No Tanks)	10 No. 50m ³ ; 7 No 70m ³ and 4 No 90m ³ Tanks
6	Diesel Storage Tank	1 No 2m ³ tank inside the HWTC
7	Weighbridge	
8.	Electrical Room	
9	Vehicle Wash	
10	Storm water attenuation tank	800m ³
11	Class 1 Oil Interceptor	

2.1 Plant & Equipment

Facility operations require the use of a range of fixed and mobile plant which are listed in Table 2.2

Table 2.2 Plant & Equipment

Number	Item
6	cb forklift (2.5t – 3.5t)
1	Reach Forklift
1	mini digger
Bay 1,2	
	Racking for 20 pallet spaces
Bay 3	
	Racking for 100 pallet spaces
	Platform scales/pallet wrapper
Bay 4	
	Racking for 400 pallet spaces
	Platform Scales
2	4m ³ chemstores
Tank Farm Bund	
10	50m ³ upstanding tanks (steel)
7	70m ³ upstanding tanks (steel)
4	90 m ³ upstanding tanks (steel)
Bay 5/6	
2	oil centrifuges
2	oil fine mesh filters
2	35m ³ oil acceptance tanks (steel)
1	sludge decanter
1	DAF interceptor
4	3m ³ chemical dosing tanks (HDPE)
	Various associated pumps, valves and chains
2	Isotankers (steel)
4	40ft Containers
1	Industrial Boiler (5,500 lbs/hr)
2	High pressure washer systems
	Washing Machine/Tumble Dryer
Bay 7	
2	10m ³ HDPE tanks

Number	Item
6	cb forklift (2.5t – 3.5t)
1	20m3 HDPE tanks
	Racking for 300 pallet spaces
	Compressor and stand-by compressor
Bay 8/9/10	
1	HDPE Shredder
1	Steel Drum Crusher
2	Drum Washers
1	Drum de-denter
1	drum chimer
1	shot blast kit
1	spray booth
1	drum dryer
6	residue sumps
1	high pressure washer
	Washing Machine/Tumble Dryer

The materials/products used on site and the maximum storage capacity are given in Table 2.3 and include diesel, hydraulic and engine oils, paint, acids (Sulphuric) and alkalis (Sodium Hydroxide). All fuel and oils are sorted in bunded areas, designed, constructed and maintained in accordance with Condition 4.4 of the Licence.

Table 2.2 –Raw Material Storage

Material	Quantity Stored (Litres)
Diesel	3,000
Hydraulic Oil	100
Kerosene	1000
Paint	1000
Acid	10000
Alkali	5000
Polyelectrolyte	2000
Toluene/Xylene	100

The quantities given in the Table are based on the volumes kept on site at any one time, but in the event of the planned closure, the actual quantities should be considerably smaller, as the shutdown would be preceded by a reduction in the on-site inventory.

3. CLOSURE TASKS & PROGRAMMES

3.1 Closure Tasks

3.1.1 *Materials Management*

A planned shutdown of operations would be carried out after the last batches of waste received at the site had been processed and consigned. It would be preceded by a scaling down of activities, thereby reducing the quantities of materials, particularly fuel and wastes, to be dealt with when implementing the DMP.

Following a decision to close the facility, waste acceptance will stop, but the site will continue to be operated by either RILTA, or a third party waste contractor until all waste has been consigned from the site.

All of the hazardous wastes in the HWTS will be consigned to the appropriately authorised off-site treatment/disposal facilities. All of the liquid waste batches in the HWTC will be treated and the effluent discharged to sewer. The remaining drums in the DRC will be reconditioned and sold. The other containers held in the DRC will be sent to off-site recycling facilities. Records of the wastes treated on site treatment and the end destination of those wastes sent off-site will be kept for inclusion in a Closure Validation Report.

Following a decision to close, the only materials accepted at the site will be those required to complete the on-site treatment processes. Once the treatment processes have been completed, it may be possible to return some of the remaining treatment chemicals, virgin oils and paints to the suppliers. The other materials will be classified as waste, some of which may be deemed hazardous. Such materials will, depending on their nature be either treated on-site or sent off-site to appropriately licensed treatment/disposal facilities. Records of the materials treated on site treatment and the end destination of the materials sent off-site will be kept for inclusion in a Closure Validation Report.

3.1.2 *Buildings*

Following the removal of the residual consumable materials, wastes, plant items and office furniture and equipment, the buildings will be cleaned out. The maintenance equipment, office equipment and furniture will either be sold or disposed of at appropriately licensed facilities. The buildings are suitable for a number of alternative commercial uses and therefore it is not intended to either seal or demolish them.

Once all plant and building cleaning has been completed, the oil interceptor on the surface water drainage system will be emptied and cleaned. Finally the telecom, electricity and water supply services will be disconnected.

3.1.3 Plant & Equipment

It is envisaged the most of the plant and equipment will be sold on for reuse. Those items that are considered obsolete at the time they are decommissioned or for which a buyer cannot be found will be scrapped. At this time it is not possible to identify which items will be sold and which will have to be scrapped, as this depends on the condition at the time of closure.

Following the decision to close, the facility staff will complete a detailed inventory of all plant and equipment on-site at that time, update Table 2.2 and prepare a decontamination and clean down schedule.

The decontamination will involve the clean out of storage tanks, process tanks, pump sumps, oil filter units and sludge filter presses. The materials removed will be suitable for treatment on-site. The clean down will primarily involve power washing. The decontamination will only be carried out in areas where the wash water can be collected and directed to the wastewater treatment plant in the HWTC.

The treatment plant will be the last item of the plant to be decommissioned. Following decommissioning, the plant and equipment will be dismantled and consigned from the site. Facility or third party waste contractor staff will maintain records of the end destinations. It is not proposed to seal the underground sumps and tanks, however they will be integrity tested.

3.1.4 Soil & Groundwater Assessment

As discussed in Section 2.2.2, the groundwater monitoring has identified the presence of elevated pH and trace levels of hydrocarbons and some volatile organic compounds in the two downgradient groundwater monitoring wells. The elevated pH is associated with the installation of the underground concrete storage tanks in the HWTC, and the level has declined over time.

Although the source of the hydrocarbons and VOC is not known, the levels are not of environmental significance, it is assumed that Agency will require a site investigation to be completed during the implementation of the Decommissioning Plan.

The scope of these works will be agreed in advance with the Agency, but for the purpose of this Plan it is assumed that the investigation will comprise the installation of four soil borings and one groundwater monitoring well and the collection and analysis of four soil and one groundwater samples for laboratory analysis. The analysis will include petroleum hydrocarbons, volatile organic compounds and pH.

The investigations will be supervised by an experienced geologist who will log the borings in accordance with BS5930, as amended and adopted by the GSI. The field observations and results of laboratory results will form the basis for the assessment of the significance of the impact, if any, and the need for and extent of any remedial works. If remedial works are considered necessary, a proposed scope will be submitted to the Agency for approval before implementation.

3.1.5 Environmental Monitoring

Monitoring will continue following the closure of the facility and pending the surrender of the Licence. The extent of the monitoring and the frequency may be amended, subject to the Agency's approval, to reflect the fact that the facility is closed.

3.2 Closure Programme

In the event that the entire facility is closed, all the operational areas will be decommissioned. The decommissioning will take approximately 10 weeks and will be carried out in a number of tasks, some of which will happen concurrently.

Task 1: Removal of consumables and wastes from the DRC/HWTC/HWTS 2 weeks

Task 2: Cleaning and consignment of plant and equipment; 3 weeks.

Task 3: Clean out of Buildings and degassing Tanks 1 week.

Task 4 Cleaning of yards; 1 day.

Task 5 Emptying and cleaning of underground tanks and pipework; 1 week

Task 6: Decommissioning WWTP: 3 days

Task 7: Emptying and cleaning of oil interceptor

Task 8: Disconnecting site services; 1 day.

Task 9: Closure Plan Validation 2 weeks.

4. CRITERIA FOR SUCCESSFUL CLOSURE

Successful decommissioning will only be complete when:

- All wastes and residual materials have either been treated onsite or consigned to appropriately authorised recovery/disposal facilities;
- Records of all wastes, materials and plant removed from the site have been prepared;
- All buildings have been cleaned out and services disconnected;
- A site investigation, if required, confirms that soil and groundwater conditions present no significant environmental risk
- The environmental monitoring confirms no impact associated with the closure and decommissioning works;
- A Closure Audit has been completed and approved by the Agency

5. CLOSURE PLAN VALIDATION

5.1 Closure Audit & Validation Report

Following the completion of the site clean out, RILTA will appoint an experienced independent environmental auditor, who will be approved by the Agency, to carry out a Closure Audit and produce a Validation Report that demonstrates the successful implementation of the Plan. The Closure Audit will address: -

1. Disposal of raw materials;
2. Disposal of wastes;
3. Decommissioning of plant and equipment;
4. Disposal of obsolete equipment;
5. Results of monitoring and testing during the decommissioning period;
6. Soil & Groundwater Assessment, and
7. The need for on-going monitoring, remedial actions or aftercare management.

The Validation Report will describe all of the activities carried out during the Closure Audit and will contain records of the destinations of all wastes and materials consigned from the site during decommissioning. The Report will be submitted to the Agency within three months of execution of the Plan.

6. CLOSURE PLAN COSTING

The costs of a planned closure will be met in full by RILTA. The costs of implementing the DMP in an unplanned closure scenario where RILTA is not in a position to meet the cost are presented in Table 6.1. The costs are based on the following assumptions:

- The closure will be unforeseen and unexpected with no advance warning that would allow an orderly wind down of activities.
- The entire facility will be decommissioned and cleaned, with all wastes and consumables being removed from the site.
- The decommissioning and building and plant cleaning will be carried out by third parties.
- A temporary site manager and operatives will be appointed to manage the plant to implement the decommissioning and clean out.
- A total of 3,370 tonnes of waste will be on site, comprising 1,500 tonnes of contaminated soil, 1,400 tonnes of hazardous waste and 100 tonnes of asbestos containing materials, 200 tonnes of batteries, 150 tonnes of processed oil and 20 tonnes of packaging.
- The consumables used in the process (solvents, paints etc) will be managed as hazardous waste. The amount (approximately 20 tonnes) included in hazardous waste present on site at the time of closure.
- The oil storage tanks in the HWTC and the diesel storage tank are full. Some of the diesel will be consumed during plant clean out.
- The cleaning of the plant and equipment and off-site removal will be cost neutral given their resale/scrap value. This is a conservative approach given the type of plant and equipment on-site.
- The batteries and processed oil have an asset value. Surplus diesel will be removed from the site at no cost.
- It is not proposed to demolish any of the buildings or tanks.
- The rates applied are those currently incurred/charged by RILTA.
- A soil and groundwater assessment will not be carried out. This will be kept under review and the DMP may be amended in the future to include such an assessment. A contingency of 15% has been allowed to cover the cost of this if required.

Table 6.1 DMP Costs

Task	Description	Quantity (No.)	Measurement Unit	Unit Rate (€)	Cost (€)	Source of unit rates
Facility Management	Site Manager 3 No Operatives 5 days/week for 6 weeks	30	Day	700	21,000	
	Utility Bills	Item		500	500	
Materials/Waste Disposal/Recovery	Removal and off site disposal of hazardous waste in HWTS	400	Tonnes	250	100,000	
	Removal and off-site disposal of hazardous waste in HWTC	1,000	Tonnes	70	70,000	
	Removal and off-site disposal of ACM	100	Tonnes	150	15,000	
	Removal and off-site recovery/ disposal of contaminated soil	1500	Tonnes	60	90,000	
	Removal and off-site disposal of processed treatment sludge	1,000	Tonnes	120	120,000	
	Removal and off site recovery of processed waste oil.	150	Tonnes	300	45,000	
	Removal and off-site recovery of diesel and waste oils	40,000	litres	-		
	Removal and sale of Batteries	100	Tonnes	500	50,000	
	Removal and disposal of packaging	20	Tonnes	10	200	
Building Plant & Equipment Clean Out	Clean out of Buildings (Included in Management Cost),		Day Rate			"
	Plant and Equipment(Included in Management Cost)					
	Removal of mobile Plant and Equipment*	-	-			-
	Degassing of diesel tanks	1	1	400	400	
	Cleaning of oil interceptor, underground storage tanks and pipework	3	Day Rate	3000	1000	
	Decommission wastewater treatment plant	1	Day Rate	1000	1000	"
Yard Cleaning	Cleaning open yard (Roadsweeper	6	Daily Hire	300	1800	
Env. Monitoring	Surface water and groundwater monitoring	8	Sample	250	2,000	
Validation Audit	Validation Report (Consultant)	1		2,500	2,500	
Security Costs	Included in Management Cost		Day			
Services Disconnection	Disconnect electricity and telecoms	1	Day	400	400	
Total Liability (€)					425,800	
Contingency (15%)					63,870	
Less the Asset Value of the Batteries and Processed Oil (€)					95,000	
Net Costs (€)					394,670	



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