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

RILTA LIMITED

ANNUAL ENVIRONMENTAL REPORT FOR THE YEAR ENDING 31st OF DECEMBER 2009

Compiled March 2010

Revision: A

TOBIN CONSULTING ENGINEERS

TOBIN
Patrick J. Tobin & Co. Ltd.

REPORT

PROJECT:

Rilta Environmental Ltd.
Greenogue Monitoring

CLIENT:

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

COMPANY:

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DOCUMENT AMENDMENT RECORD

Client: Rilta Environmental Ltd.

Project: Greenogue Monitoring

Title: Annual Environmental Report

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A	Annual Environmental Report	DC	30/03/10	ST	31/03/10	DG	31/03/10
Revision	**Description & Rationale**	**Originated**	**Date**	**Checked**	**Date**	**Authorised**	**Date**
TOBIN Consulting Engineers							

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1 INTRODUCTION

In accordance with condition 11.9 of Waste Licence 192-02, the following Annual Environmental Report includes all information specified in Schedule F: Content of Annual Environmental Report and has been compiled with the aid of the Waste licensing draft guidance notes 19.04.99.

2 REPORTING PERIOD

Rilta Environmental Ltd was issued with Waste Licence No: 192-02 by the EPA on May 29th 2008. This AER covers the period from January 1st 2009 to December 31st 2009.

3 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

The licensed activities carried out at the RILTA facility as per Waste Licence No: 192-02 are as follows:

Third Schedule of the Waste Management Act, 1996 to 2003.
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.

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.

Fourth Schedule of the Waste Management Acts 1996 to 2003.

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.

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.

4 WASTE QUANTITIES (1ST JANUARY 2008 - 31ST DECEMBER 2009)

The following tables summarise the types and quantities of waste handled over the period 1st January 2009 to 31st December 2009, at RILTA's Greenogue facility.

Table 4-1 Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)

Waste Description	EWC Code	Hazardous Y/N	Waste Generated (tonnes)	Was the Waste Treated On Site	Quantity Treated On Site	Recovery / Disposal Code
Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)						
Materials unsuitable for consumption or processing	02 07 04	N	23.64	N		R10
Waste not otherwise specified	06 01 99	N	175.46	N		R6
Solid Salts and Solutions	06 03 14	N	94.04	N		R5
Aqueous washing liquids and other liquors	07 05 01*	Y	20.88	N		R6
Oily Fly Ash and Boiler Dust	10 01 04*	Y	25.22	N		R5
Liquors from the pickling of metals	11 01 05*	Y	79.66	N		R4/R5
Sludges and Filtercakes containing dangerous substances	11 01 09*	Y	47.1	N		R5
Absorbents. Filter material	15 02 02*	Y	149.04	N		R3/R4
Discarded organic chemicals	16 05 07*	Y	16.66	N		R6
Aqueous Liquids containing waste containing dangerous substances	16 10 01*	Y	89.82	N		D8
Aqueous Liquids containing waste containing dangerous substances	16 10 01*	Y	153.98	N		R6
Paints, Inks, Adhesives	20 01 27*	Y	15.76	N		D9
Mine Screenings	01 01 01	N	46.41	N		R13/D15
Drilling Waste	01 05 05*	Y	179.4	Y	179.4	D9/R9
Agrochemical Waste	02 01 09	N	0.24	N		R13/D15
Food Preparation waste	02 02 99	N	28.31	N		R13/D15
Off spec product	02 07 04	N	16.19	N		R13/D15
Wood Preservatives	03 02 01*	Y	0.14	N		R13/D15
Wood Preservatives	03 02 05*	Y	0.02	N		R13/D15
Dye Waste	04 02 16*	Y	2	N		R13/D15
Dye Waste	04 02 17	N	0.13	N		R13/D15

Waste Description	EWC Code	Hazardous Y/N	Waste Generated (tonnes)	Was the Waste Treated On Site	Quantity Treated On Site	Recovery / Disposal Code
Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)						
Oily Sludge	05 01 03*	Y	1.43	N		R13/D15
Oil Spill Waste	05 01 05*	Y	2	Y	2	D9/R9
Sulphuric Acid	06 01 01*	Y	11.24	N		R13/D15
Sulphuric Acid	06 01 01*	Y	4.98	Y	4.98	D9/R9
Hydrochloric Acid Waste	06 01 02*	Y	13.59	Y	13.59	D9/R9
Hydrochloric Acid Waste	06 01 02*	Y	2.85	N		R13/D15
Hydrochloric Acid Waste	06 01 03*	Y	0.32	Y	0.32	D9/R9
Hydrochloric Acid Waste	06 01 03*	Y	46.68	N		R13/D15
Phosphoric Acid Waste	06 01 04*	Y	2.54	N		R13/D15
Nitric Acid Waste	06 01 05*	Y	19.14	Y	19.14	D9/R9
Nitric Acid Waste	06 01 05*	Y	4.52	N		R13/D15
Acidic Waste	06 01 06*	Y	34.16	Y	34.16	D9/R9
Acidic Waste	06 01 06*	Y	14.22	N		R13/D15
Acidic Waste	06 01 99	N	5.3	Y	5.3	D9/R9
Acidic Waste	06 01 99	N	7.44	N		R13/D15
Ammonium Hydroxide Waste	06 02 03*	Y	0.46	N		R13/D15
Caustic Soda Waste	06 02 04*	Y	11.57	Y	11.57	D9/R9
Caustic Soda Waste	06 02 04*	Y	1.29	N		R13/D15
Alkaline Waste	06 02 05*	Y	3.43	N		R13/D15
Mercury Waste	06 04 04*	Y	0.08	N		R13/D15
Toxic Liquid Corrosive	06 04 05*	Y	0.7	N		R13/D15
Hydrochloric Acid Waste	06 04 99	N	7.24	N		R13/D15
Hydrogen Peroxide Wash	07 01 01*	Y	0.15	Y	0.15	D9/R9
Methanol	07 01 99	N	0.25	N		R13/D15
Oven Waste	07 02 99	N	1.09	N		R13/D15
Contaminated washings	07 05 01*	Y	75.5	Y	75.5	D9/R9
Solvent waste	07 05 04*	Y	0.65	Y	0.65	D9/R9
Solvent waste	07 05 04*	Y	85.31	N		R13/D15
Treated Wastewater	07 05 11*	Y	6.36	Y	6.36	D9/R9
Sudocream	07 05 13*	Y	3.24	N		R13/D15
Off Spec Cosmetics	07 06 99	N	1.47	N		R13/D15
Water Based Paint washings	08 01 11*	Y	33.74	Y	33.74	D9/R9
Paint Waste	08 01 11*	Y	173.29	N		R13/D15
Varnish	08 01 12	N	24.92	N		R13/D15
Paint Sludge	08 01 13*	Y	14.75	N		R13/D15
Isopropyl Alcohol	08 01 17*	Y	1.77	N		R13/D15

Waste Description	EWC Code	Hazardous Y/N	Waste Generated (tonnes)	Was the Waste Treated On Site	Quantity Treated On Site	Recovery / Disposal Code
Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)						
Paint Washings	08 01 20	N	0.41	N		R13/D15
Paint waste	08 01 99	N	1.96	N		R13/D15
Ink washings	08 03 08	N	5.28	Y	5.28	D9/R9
Ink waste	08 03 12*	Y	158.36	N		R13/D15
Ink washings	08 03 13	N	2.58	N		R13/D15
Adhesive waste	08 04 09*	Y	71.03	N		R13/D15
Adhesive waste	08 04 10	N	25.43	N		R13/D15
Adhesive washings	08 04 16	N	8.04	Y	8.04	D9/R9
Adhesive Waste	08 04 99	N	1.67	N		R13/D15
Photo Development Waste	09 01 01*	Y	41.17	N		R13/D15
Photo Development Waste	09 01 03*	Y	0.72	N		R13/D15
Photo Fixer Waste	09 01 04*	Y	38	N		R13/D15
Photo Fixer Waste	09 01 05*	Y	0.32	N		R13/D15
Fly Ash	10 01 04*	Y	2.22	N		R13/D15
Acidic Washings	11 01 06*	Y	0.6	Y	0.6	D9/R9
Acidic Waste	11 01 06*	Y	8.62	N		R13/D15
Sludge Waste	11 01 08*	Y	11.44	Y	11.44	D9/R9
Phosphatic Sludge	11 01 08*	Y	22.48	N		R13/D15
Sludge Waste	11 01 09*	Y	307.71	Y	307.71	D9/R9
Sludge Waste	11 01 09*	Y	82.79	N		R13/D15
Sludge Waste	11 01 10	N	10.25	N		R13/D15
Copper Sulphate	11 01 11*	Y	6.68	N		R13/D15
Aqueous waste	11 01 12	N	4	Y	4	D9/R9
Aqueous waste	11 01 12	N	4.12	N		R13/D15
Degreaser	11 01 14	N	0.3	N		R13/D15
Aqueous Solution	11 01 99	N	5.1	N		R13/D15
Copper Sulphate Solution	11 02 06	N	21	Y	21	D9/R9
Zinc Hydroxide	11 03 01*	Y	24.72	N		R13/D15
Toxic Liquid Corrosive	11 03 02*	Y	1	N		R13/D15
Coolant	12 01 07*	Y	25.22	Y	25.22	D9/R9
Coolant	12 01 09*	Y	1097.25	Y	1097.25	D9/R9
Coolant	12 01 09*	Y	128.82	N		R13/D15
Polish Waste	12 01 99	N	0.87	N		R13/D15
Hydraulic oil	13 01 10*	Y	0.27	Y	0.27	D9/R9
Hydraulic oil	13 01 13	N	0.03	N		R13/D15

Waste Description	EWC Code	Hazardous Y/N	Waste Generated (tonnes)	Was the Waste Treated On Site	Quantity Treated On Site	Recovery / Disposal Code
Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)						
Hydraulic oil	13 01 13*	Y	6.57	Y	6.57	D9/R9
Lube Oil	13 02 05*	Y	2.03	Y	2.03	D9/R9
Lube Oil	13 02 05*	Y	1.88	N		R13/D15
Lube Oil	13 02 06*	Y	28.78	Y	28.78	D9/R9
Lube Oil	13 02 06*	Y	1.02	N		R13/D15
Waste Oil	13 02 08*	Y	1780.6	Y	1780.6	D9/R9
Waste Oil	13 02 08*	Y	16.87	N		R13/D15
Coolant	13 03 08*	Y	7.02	Y	7.02	D9/R9
Coolant	13 03 10*	Y	9.53	Y	9.53	D9/R9
Bilge Oil	13 04 03*	Y	339.34	Y	339.34	D9/R9
Bilge Oil	13 04 03*	Y	2.03	N		R13/D15
Interceptor Sludge	13 05 01*	Y	3.9	Y	3.9	D9/R9
Interceptor Sludge	13 05 03*	Y	8342.7	Y	8342.7	D9/R9
Interceptor Waste	13 05 07*	Y	2223.26	Y	2223.26	D9/R9
Solid Waste from Interceptors	13 05 08*	Y	1.53	N		R13/D15
Fuel Waste	13 07 01*	Y	84.87	Y	84.87	D9/R9
Fuel Waste	13 07 01*	Y	6.43	N		R13/D15
Petrol	13 07 02*	Y	1.5	Y	1.5	D9/R9
Fuel Waste	13 07 03*	Y	4.24	Y	4.24	D9/R9
Oil Spill Waste	13 08 99*	Y	377.66	Y	377.66	D9/R9
Oil Spill Waste	13 08 99*	Y	11.26	N		R13/D15
Aerosols	14 06 01*	Y	2.31	N		R13/D15
Solvents	14 06 02*	Y	37.85	N		R13/D15
Solvents	14 06 03*	Y	24.28	Y	24.28	D9/R9
Other solvents and solvent mixtures	14 06 03*	Y	12.16	N		R12
Solvents	14 06 03*	Y	288.7	N		R13/D15
Plastic Waste	15 01 02	N	0.05	N		R13/D15
Contaminated Packaging	15 01 10*	Y	94.24	N		R13/D15
Contaminated Packaging	15 01 10*	Y	1367.04	Y		R4/D14
Absorbents	15 02 02*	Y	434.7	N		R13/D15
Absorbents	15 02 03	N	17.99	N		R13/D15
Oil Filters	16 01 07*	Y	31.07	N		R13/D15
Brake Pads	16 01 12	N	0.08	N		R13/D15
Brake Fluids	16 01 13*	Y	0.23	N		R13/D15

Waste Description	EWC Code	Hazardous Y/N	Waste Generated (tonnes)	Was the Waste Treated On Site	Quantity Treated On Site	Recovery / Disposal Code
Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)						
Antifreeze Washings	16 01 14*	Y	2	Y	2	D9/R9
Antifreeze	16 01 14*	Y	25.57	N		R13/D15
Antifreeze Washings	16 01 15	N	2.54	Y	2.54	D9/R9
Antifreeze	16 01 15	N	0.88	N		R13/D15
Waste Metal	16 01 18	N	1.47	N		R13/D15
Glass	16 01 20	N	0.12	N		R13/D15
Silica	16 01 22	N	0.16	N		R13/D15
Redundant Transformers	16 02 09*	Y	2.6	N		R13/D15
WEEE	16 02 14	N	6.34	N		R13/D15
WEEE	16 02 16	N	0.14	N		R13/D15
Sodium Chloride Washings	16 03 03*	Y	9.02	Y	9.02	D9/R9
Discarded Inorganic chemicals	16 03 03*	Y	7.22	N		R13/D15
Off Spec Product	16 03 04	N	31.19	N		R13/D15
Coolant	16 03 05*	Y	9.48	Y	9.48	D9/R9
Off Spec waste	16 03 05*	Y	7.59	N		R13/D15
Off Spec Waste	16 03 06	N	0.11	N		R13/D15
Aerosols	16 05 04*	Y	7.34	N		R13/D15
Lab Chemicals	16 05 06*	Y	1.1	Y	1.1	D9/R9
Lab Chemicals	16 05 06*	Y	35.69	N		R13/D15
Discarded Inorganic chemicals	16 05 07*	Y	30.2	Y	30.2	D9/R9
Discarded Inorganic chemicals	16 05 07*	Y	141.85	N		R13/D15
Discarded Inorganic chemicals	16 05 08*	Y	3	Y	3	D9/R9
Discarded Inorganic chemicals	16 05 08*	Y	0.12	N		R13/D15
Lead/Acid Batteries	16 06 01*	Y	2271.31	N		R4
Nickel-Cadmium Batteries	16 06 02*	Y	12.27	N		R4
Alkaline Batteries	16 06 04	N	12.51	N		R4
Other Batteries	16 06 05	N	0.71	N		R4
Acidic Waste	16 06 06*	Y	0.23	Y	23	D9/R9
Tank Cleaning Waste	16 07 08*	Y	710.08	Y	710.08	D9/R9
Tank Cleaning Waste	16 07 08*	Y	2.9	N		R13/D15
Tank Cleaning Waste	16 07 09*	Y	156.82	Y	156.82	D9/R9
Tank Cleaning Waste	16 07 09*	Y	31.46	N		R13/D15
Bund Area Waste	16 07 99	N	499.57	Y	499.57	D9/R9
Bund Area Waste	16 07 99	N	9.24	N		R13/D15
Aqueous Waste	16 10 01*	Y	2605.06	Y	2605.06	D9/R9

Waste Description	EWC Code	Hazardous Y/N	Waste Generated (tonnes)	Was the Waste Treated On Site	Quantity Treated On Site	Recovery / Disposal Code
Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)						
Aqueous Waste	16 10 01*	Y	91.1	N		R13/D15
Aqueous Waste	16 10 02	N	2562.56	Y	2560.52	D9/R9
Aqueous Waste	16 10 02	N	14.11	N		R13/D15
Concrete	17 01 01	N	0.01	N		R13/D15
Coal Tar	17 03 01*	Y	2262.78	N		R13/D15
Contaminated Soil	17 05 03*	Y	9851.2	N		R13/D15
Contaminated Soil	17 05 04	N	1814.14	N		R13/D15
Asbestos	17 06 01*	Y	8826.26	N		D15
Asbestos	17 06 04	N	0.44	N		D15
Asbestos	17 06 05*	Y	5076.55	N		D15
Mixed C&D Waste	17 09 04	N	0.2	N		R13/D15
Sharps	18 01 01	N	0.04	N		R13/D15
Sharps	18 01 03*	Y	0.04	N		R13/D15
Off Spec Medicines	18 01 06*	Y	43.4	N		R13/D15
Off Spec Medicines	18 01 07	N	0.1	N		R13/D15
Off Spec Medicines	18 01 08*	Y	1.01	N		R13/D15
Off Spec Medicines	18 01 09	N	61.04	N		R13/D15
Veterinary Waste	18 02 06	N	2.65	N		R13/D15
Veterinary Waste	18 02 08	N	28.98	N		R13/D15
Filtercake	19 02 05*	Y	1.68	N		R13/D15
Waste Sludge	19 02 05*	Y	2.1	Y	2.1	D9/R9
Stabilized Sludge	19 03 05	N	0.16	N		R13/D15
Leachate	19 07 03	N	4249.12	Y	4249.12	D9/R9
Lubricating Grease	19 08 09	N	1.13	N		R13/D15
Spent Carbon	19 09 04	N	17.54	N		R13/D15
Resin Sludge	19 09 05	N	10.5	Y	10.5	D9/R9
Rubber waste	19 12 04	N	0.84	N		R13/D15
Leachate	19 12 12	N	5129.46	Y	5129.46	D9/R9
Contaminated Groundwater	19 13 07*	Y	49.42	Y	49.42	D9/R9
Contaminated Groundwater	19 13 08	N	0.68	Y	0.68	D9/R9
Food Grease	20 01 08	N	2.34	N		R13/D15
Pesticides	20 01 19*	Y	5.28	N		R13/D15
Fluorescent Tubes	20 01 21*	Y	1.13	N		R13/D15
WEEE	20 01 23*	Y	2.22	N		R13/D15
Cooking Oil	20 01 25	N	1.93	N		R13/D15

Waste Description	EWC Code	Hazardous Y/N	Waste Generated (tonnes)	Was the Waste Treated On Site	Quantity Treated On Site	Recovery / Disposal Code
Incoming Waste and on Site Treatment (01/01/09 to 31/12/09)						
Waste Oil	20 01 26*	Y	2.57	N		R13/D15
Lubricating Grease	20 01 26*	Y	37.82	Y	37.82	D9/R9
Paint Waste	20 01 27*	Y	268.35	N		R13/D15
Detergents	20 01 29*	Y	6.48	N		R13/D15
Detergents	20 01 30	N	0.92	N		R13/D15
Off Spec Medicines	20 01 31*	Y	0.29	N		R13/D15
Off Spec Medicines	20 01 32	N	2	N		R13/D15
Batteries	20 01 33*	Y	0.34	N		R13/D15
Batteries	20 01 34	N	0.08	N		R13/D15
WEEE	20 01 35*	Y	1.13	N		R13/D15
WEEE	20 01 36	N	0.96	N		R13/D15
Waste Metal	20 01 40	N	0.42	N		R13/D15
Car Exhausts	20 01 40	N	35.813	N		R4
Drain Clearing Sludge	20 03 03	N	1.14	N		R13/D15
Drain Clearing Sludge	20 03 99	N	61.79	Y	61.79	D9/R9

As per Waste Licence No: 192-02, RILTA is allowed to accept up to 111,000 tonnes/year of waste consisting of hazardous waste, commercial waste, construction and demolition waste, industrial sludges and industrial waste at the facility.

The above table shows that the total volume of waste accepted by RILTA from January 1st 2009 to December 31st 2009 was 66,636.083 tonnes.

5 SUMMARY REPORT ON EMISSIONS

Schedule C of Waste Licence 192-02 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 1250/01/1002, as submitted to the Environmental Protection Agency on the 28th of February 2005.

Monthly, Quarterly and Annual monitoring was carried out during the period from 01/01/09 to 31/12/09. All monitoring results and reports have been submitted to the agency as required by Schedule E of the waste licence. The following is a summary of the results and findings of the 2009 monitoring period.

5.1 GROUNDWATER EMISSIONS

The quarterly reports in respect of groundwater emissions have been submitted to the EPA in April, July and October 2009 and January 2010, as required by Schedule E of the waste licence. The following is a summary of the values recorded for each parameter.

5.1.1 Groundwater monitoring point 1 (BH1)

Location: E301555 N228440

pH:

The pH of the analysed groundwater from BH1 ranged from 7.51 during February 2009 to 7.34 during July 2009. The values are within the normal range and reflect the natural conditions of this groundwater.

Conductivity:

The conductivity concentrations ranged from a high of 681µS/cm in February to a low of 610µS/cm in May during 2009. This range of values is considerably lower than the Drinking Water Regulations and reflects normal background levels.

Heavy metals:

Concentrations of arsenic and mercury in BH1 were below the respective detection limits of 1ug/l and 10ug/l respectively, for all monitoring events.

Copper, chromium, cadmium, nickel and zinc were all analysed as part of the annual groundwater set of parameters for BH1. All were below the regulatory limits set by the Drinking Water Regulation standards and the EPA Guideline Values.

Inorganic:

The following inorganic parameters were analysed as part of the annual groundwater set: total alkalinity, chloride, sulphate, potassium, sodium, calcium and magnesium. The results were within the limits set by the Drinking Water Regulation standards and the EPA Guideline Values.

List 1/11 Organic Substances, Mineral Oil, BTEX:

For all groundwater sampled at BH1 from January to December 2009, List1/11 Organic Substances, Mineral Oil, BTEX were all found to be below the detection limit.

5.1.2 Groundwater monitoring point 2 (BH2)

Location: E301600 N228550

pH:

The pH of the analysed groundwater from BH2 ranged from 7.88 in February 2009 to 7.48 in October 2009. No pH concentrations at BH2 were of concern when compared to the Drinking Water Standards which have a pH range of >6.5 and <9.5. It is noticeable that in 2009 the pH concentration of samples taken from BH2 are within the suggested pH range and show stabilisation when compared to concentrations from 2008.

Conductivity:

The conductivity of BH2 ranged from a low of 758µS/cm in February to a high of 834µS/cm in October 2009. None of the monitoring events at BH2 had concentrations in excess of the European Community Drinking Water Regulations - SI 278 of 2007.

Heavy metals:

Arsenic at BH2 was recorded within the range 3-6µg/l, this is within the MAC of 10µg/l set in the Drinking Water Regulations – SI 278 of 2007. Similar to 2008, all groundwater sampled from BH2 was found to contain a value of Mercury below the laboratory detection limit.

Concentrations of copper and lead were less than laboratory detection limits when sampled in July 2009. Chromium and cadmium were less than the laboratory limits of detection, <0.4 and <50 µg/l respectively when sampled in July 2009. Nickel was detected in low concentrations (5.10 µg/l) and was below the EPA Guideline Value of 20µg/l. Manganese was elevated when sampled during the July monitoring event (306 µg/l) and was in excess of the EPA Guideline value of 50 µg/l.

Inorganic:

Potassium levels at BH2 (5.12mg/l) were slightly elevated compared to the EPA Guideline Value of 5mg/l. Chloride levels at BH2 23.6mg/l were below the EPA Guideline Value of 30mg/l. Sodium concentrations for 2009 were recorded as 50 mg/l during the annual monitoring event, this was below the EPA Guideline Value of 150mg/l.

List 1/11 Organic Substances, Mineral Oil, BTEX:

Similar to 2008, all groundwater sampled at BH2 from January to December 2009, List1/11 Organic Substances, Mineral Oil and BTEX was found to be below the detection limit with the exception of Mineral Oil in February (216µg/l) and October (55.2µg/l).

List1/11 substances were detected at BH2 during all monitoring events in 2009. Methyl tert-butyl ether was detected during Q1 2009 (0.018µg/l), Q2 (11.3µg/l), Q3 (10.4µg/l) and Q4 (174µg/l) at BH2. Additional list I/II substances detected during 2009 included 2,4 Dimethylphenol (1.12µg/l) during Q3, 2-Methylphenol (1.86ug/l) during Q3, 4-Methylphenol (5.71ug/l) during Q3, Bis(2-ethylhexyl) phthalateat (2.78ug/l) during Q3, Phenol (9.53ug/l) during Q3 and Phenol (1.23µg/l) during Q4.

5.1.3 Groundwater monitoring point 3 (BH3)

Location: E301630 N228555

Due to site improvement works BH3 was inaccessible during Q1 of 2009.

pH:

The pH of the analysed groundwater from BH3 ranged from 11.52 in May to 10.56 in October during 2009. The values are outside the pH range set out in the EPA Guideline Values, which have a pH range of >6.5 and <9.6. As discussed in the previous AER 2008, pH levels at this borehole are assumed to be elevated due to the use of alkaline cements and backfill construction material, which was used during the installation of underground tanks at the facility. While still elevated the pH measured at BH3 does, like concentrations at BH2, appear to be receding.

Conductivity:

The conductivity ranged from 943µS/cm during May 2009 to 1513µS/cm during October 2009. Concentrations recorded at BH3 were slightly elevated when compared to the EC Drinking Water Regulations and EPA Guideline Values. It is suggested that the high conductivity concentration to the north of the site may be attributable to the construction of the underground tanks, where significant alkaline cements and construction fill were placed within the environs of BH3.

Heavy metals:

Arsenic at BH3 was recorded within the range 8.35 - 10.5µg/l. Arsenic results for the Q4 2009 (10.5µg/l) event slightly exceeded EC Drinking Water Regulations - SI 278 of 2007, which has a limit value of 10µg/l. All groundwater samples at BH3 were found to have concentrations of mercury below the limit values set out in both SI 278 of 2007 (1µg/l) and the EPA Guideline values (1µg/l).

List 1/11 Organic Substances, Mineral Oil, BTEX:

All groundwater sampled at BH3 between March and December 2009 was found to be similar to concentrations from 2008.

Mineral oil was detected in BH3 during Q2 2009 (122µg/l), this exceeded the EPA Guideline Value of 10µg/l, mineral oil was below the laboratory limit of detection during all other monitoring events during 2009. BTEX concentrations at BH3 were found to be <10µg/l during all monitoring events in 2009, only the concentration of Benzene (2.94µg/l) exceeds the MAC limit value (1µg/l) set out in SI No. 278 of 2007.

List1/11 substances were detected at BH3 during all 3 monitoring events during 2009. Methyl tert-butyl ether was detected at BH3 during Q2 (23.4µg/l), Q3 (44ug/l) and Q4 (174µg/l) 2009. O – Xylene (1.74ug/l) and Toluene (3.5ug/l) were detected at BH3 during Q3 2009. 2-Methylphenol (1.70ug/l), 4-Methylphenol (4.95ug/l), Bis(2-ethylhexyl) phthalateat (8.06ug/l) and Phenol were also detected at BH3 during Q3 2009. During Q4 2009 the list I/II substances detected at BH3 were 2,4-Dimethylphenol (10.5µg/l), 2-Methylphenol (37.4µg/l), 4-Methylphenol (91.9µg/l), Bis(2-ethylhexyl) phthalate (2.33µg/l) and Phenol (80.9µg/l).

No Pesticide concentrations were detected during any monitoring event at BH3 during 2009.

5.1.4 Groundwater monitoring point 4 (GW3)

Location: E301626 N228536

Due to site improvement works BH3 was inaccessible until March 2009. GW3 was sampled during Q1 as an alternative GW monitoring point due to its proximity to BH3.

pH:

The pH of the analysed groundwater from GW3 was 8.05 during Q1 (February) 2009. This value is consistent with the EPA Guideline Values which have a pH range of >6.5 and <9.6.

Conductivity:

The conductivity for GW3 in Q1 2009 was 748µS/cm. This value is below the EPA Guideline value (1000µS/cm).

Heavy metals:

Arsenic at GW3 was recorded as 3µg/l during the February Q1 monitoring event. GW3 contained a value of mercury below the laboratory detection limit during Q1 2009.

List 1/11 Organic Substances, Mineral Oil, BTEX:

Mineral oil reported for GW3 during Q1 2009 (284µg/l) was above the EPA Guideline Value of 10µg/l. Methyl tert-butyl ether was detected at GW3 during Q1 (36µg/l) 2009.

No pesticides within the pesticide-testing suite were detected during laboratory analysis of samples from GW3 during Q1 2009.

5.2 SURFACE WATER EMISSION

The quarterly reports in respect of Surface Water Emissions were submitted to the EPA in April, July and October 2009 and January 2010 as required by Schedule E of the waste licence. The following is a summary of the values recorded for each parameter.

5.2.1 Surface Water Monitoring Point 1: (SW1)

Location: E301670 N228562

pH:

The pH of the analysed groundwater from SW1 ranged from 8.07 in February to 8.32 in August during 2009. The values are within the normal range and reflect the natural conditions of this surface water.

Chemical Oxygen Demand:

The chemical oxygen demand for SW1 was below the laboratory level of detection during all monitoring events with the exception of Q4 2009 (10.1mg/l). Results for Q4 2009 are below the guideline limit value (40mg/l).

Suspended Solids:

The level of suspended solids in the samples taken for SW1 were below the limit levels set out in W192-02 (35mg/l) for all monitoring events during 2009.

Mineral Oils:

Similar to 2008, the level of Mineral Oil recorded for SW1 was below the level of detection (0.01mg/l) for all monitoring events in 2009.

5.2.2 Surface Water Monitoring Point 2: (SW2)

Location: E301565 N228555

pH:

The pH of analysed groundwater from SW2 ranged from 8.08 in February to 8.40 in May during 2009. The values are within the normal range and reflect the natural conditions of this surface water.

Chemical Oxygen Demand:

The chemical oxygen demand for SW2 was below the level of detection for all monitoring events during 2009, with the exception of Q3 (9.28mg/l) and Q4 (8.67mg/l). Results for Q3 and Q4 2009 are below guideline limit values (40mg/l).

Suspended Solids:

The level of suspended solids in samples taken from SW2 were below the limit levels set out in W192-02 (35mg/l) for all monitoring events during 2009.

Mineral Oils:

Similar to 2008, the concentrations of Mineral Oil recorded for SW2 were below the laboratory level of detection (0.01mg/l) for all monitoring events during 2009, with the exception of Q1 February (0.343mg/l). Although Q1 was above the detection limit it remained significantly below the limit value set out in W192-02 (5mg/l).

5.2.3 Surface Water Monitoring Point 3: (SW3*)*

Location: E301558 N228560

pH:

The pH of the analysed groundwater from SW3 ranged from 6.61 in February to 7.73 in October during 2009. The values are within the normal range and reflect the natural conditions of this surface water.

Chemical Oxygen Demand:

The chemical oxygen demand for SW3 was above the laboratory limit of detection (<7mg/l) for all monitoring events during 2009. These results were all below the suggested MAC value of 40mg/l, with the exception of Q1 (50mg/l) during February 2009. Concentrations at SW3 were monitored closely to ensure that this elevated concentration was a one off event during 2009.

Suspended Solids:

The level of suspended solids in the samples taken for SW3 were below the limit levels set out in W192-02 (35mg/l) for all monitoring events during 2009.

Mineral Oils:

The level of Mineral Oils recorded for SW3 was below the level of detection (0.01mg/l) during Q1 2009. Levels recorded during Q2 (1.09mg/l), Q3 (1.06mg/l) and Q4 (0.815mg/l) were all above the laboratory detection limit but below the limit level set out in W192-02 (5mg/l).

5.3 WASTEWATER EMISSIONS

5.3.1 Wastewater Emission Point (WW1)

Location: E301655 N228530

The quarterly reports in respect of “Wastewater Emissions to Sewer” have been submitted to the EPA in April, July and October 2009 and January 2010 as required by Schedule E of the licence. The following is a summary of the values recorded for each parameter.

Volume Emitted:

The total volume emitted during the reporting period was ***29,195m^3***.

BOD:

The average value for BOD during the reporting period was 205mg/l, with a maximum and minimum value of 941mg/l and 2.19mg/l respectively. These values are within the limit emission value set out in waste licence 192-02 for all monitoring events.

COD:

The average value for COD during the reporting period was 564mg/l, with a maximum and minimum value of 2770mg/l and 29mg/l respectively. These values are within the limit emission value set out in waste licence 192-02 for all monitoring events.

Mineral Oils:

The average (1) value for Mineral Oils during the reporting period was 1959µg/l, with a maximum and minimum value of 139,000µg/l and 29µg/l respectively. The values were within the limit emission value of 10,000µg/l for all monitoring events, with the exception of April 2009 (139,000µg/l).

Suspended Solids:

The average value for suspended solids during the reporting period was 44.9mg/l, with a maximum and minimum value of 178mg/l and <10mg/l respectively. The values were well within the emission limit value of 500mg/l set out in waste licence 192-02 for all monitoring events.

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[1] Result for April 2009 was not included in the average mineral oil figure. The result for April 2009 (139000µg/l) was a one-off elevated concentration, which if included in the yearly average would disproportionately elevate the average concentration above the licence limit value (10,000µg/l). For a more representative result the average mineral oil result was calculated for an 11 month period of 2009.

Sulphates:

The average value for sulphates during the reporting period was 112mg/l, with a maximum and minimum value of 390mg/l and 29mg/l respectively. The values at all monitoring locations were within the emission limit value of 1000mg/l during all monitoring events.

pH:

The average pH value during the reporting period was 7.60 with maximum and minimum values of 8.41 and 7.01 respectively. All pH values are within the emission limit band of pH 6-10.

Surfactants:

The average value for surfactants during the reporting period was 1.33mg/l, with a maximum value of 8mg/l and a minimum value of <0.1mg/l. These values are significantly lower than the emission limit of 100mg/l, with all results below 10mg/l.

Toluene:

The average value for toluene during the reporting period was 120µg/l, with a maximum and minimum value of 587µg/l and 9µg/l respectively. The values were within the limit emission value of 1000µg/l for all monitoring events.

Benzene:

The average value for benzene during the reporting period was 45µg/l, with a maximum value of 342µg/l and a minimum value of 5.22µg/l. These values are significantly lower than the emission limit of 1000µg/l.

Ethylbenzene:

The average value for ethylbenzene during the reporting period was 15µg/l, with a maximum value of 82µg/l and a minimum value of <5µg/l. These values are significantly lower than the emission limit of 1000µg/l.

Total Xylene:

The average value for xylene during the reporting period was 92µg/l, with a maximum value of 239µg/l and a minimum value of <10µg/l. These values are significantly lower than the emission limit of 1000µg/l.

Zinc (as Zn):

The average (2) value for zinc during the reporting period was 655µg/l, with a maximum value of 36,800µg/l and a minimum value of 68.6µg/l. In general concentrations for zinc were below the limit value set out in waste licence 192-02 (3000µg/l) with the exception of the April (36,800µg/l). Rilta have increased the capacity of its laboratory capabilities and it is hoped that wastes with high levels of zinc may be highlighted and a decision as to their possible treatment or otherwise made.

Copper (as Cu):

The average (3) value for copper during the reporting period was 107µg/l, with a maximum value of 4310µg/l and a minimum value of 3.62µg/l. These values are significantly lower than the emission limit of 1000µg/l.

Metals Screen:

A number of metals were analysed quarterly during Q2 and Q3 2009. Please note that since October 2009, all metals are tested monthly in accordance with Waste Licence 192-02.

Lead had an average concentration of 5.3µg/l during 2009 and concentrations ranged from 19.3µg/l to <1µg/l. Lead concentrations for 2009 are significantly below the licence limit of 200µg/l.

Arsenic had an average concentration of 8.36µg/l during 2009 and concentrations ranged from 20µg/l to <0.75µg/l, while results for Mercury were <0.05µg/l for all monitoring events during 2009.

Chromium had an average concentration of 13.59µg/l during 2009 and concentrations ranged from 63.5µg/l to <0.7µg/l, while results for Cadmium were <0.4µg/l during all monitoring events, with the exception of May (2.21µg/l).

Nickel recorded an average value of 223µg/l, with a maximum and minimum value of 974µg/l and <1.5µg/l respectively. These concentrations are below the emissions limit of 1000µg/l set out in waste licence 192-02.

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[2] Result for April 2009 was not included in the average zinc concentration. The result for April 2009 (36,800µg/l) was a one-off elevated concentration, which if included in the yearly average would disproportionately elevate the average concentration above the licence limit value (3,000µg/l). For a more representative result the average zinc result was calculated for an 11 month period of 2009.

[3] Result for April 2009 was not included in the average copper concentration. The result for April 2009 (4310µg/l) was a one-off elevated concentration, which if included in the yearly average would disproportionately elevate the average concentration above the licence limit value (1,000µg/l). For a more representative result the average copper result was calculated for a period of 11 months during 2009.

Boron recorded an average value of 158µg/l, with a maximum and minimum value of 408µg/l and <18µg/l respectively. No wastewater emission limits for Boron are available in the waste licence.

6 AIR EMISSIONS

Locations: A1: E301630, N228465 A2: E301620, N228440
A3: E301335, N228445

Odour Monitoring Ireland (OMI) carried out the annual air emission monitoring for T.A. Luft Organics Class 1 and Characterisation of the VOC emission. OMI also carried out the bi-annual Total organic carbon (as C) monitoring.

The reports are attached in ***Appendix A***.
The report concludes that all emissions to air are within the limits of Section C3.1, C3.2 and C3.3 of Waste Licence 192-02 with some exceptions:

For both Round 1 –Monitoring and Round 2 –Monitoring

- **Round 1:** The results indicate that emissions to atmosphere of total organics (as carbon) from emission point A1, A2 and A3 were in compliance with the mass emission limit values stated in the Waste Licence Number 192-02. The results also showed that the volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with set volumetric airflow limit values stated in Waste Licence Number 192-02.

- **Round 2:** The results indicated that emissions to the atmosphere of total organics (as carbon) from points A1 and A3 were in compliance with emission limit values set out in WL192-02, however point A2 was found to be non-compliant, with a total concentration of VOC (as Carbon) exceeding the limit set out in W0192-02. The volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with the set volumetric airflow limits set out in Waste Licence W192-02.

A2 during Round 2 exceeded the limit value set out in W192-02, this breach was an isolated event despite the very restrictive limit of 0.1 Kg TOC /hour which applies to the paint spray booth. At present monitoring will continue and appropriate actions will be taken accordingly.

7 DUST

Locations:	D1: E301630, N228450	D2: E301580, N228550
	D3: E301670, N228555	D4: E301630, N228420

According to Schedule E of the waste licence, dust monitoring is required at the facility three times a year (twice between May and September). Dust monitoring was carried out at four separate locations along the northern boundaries of the subject site. The samples were delivered to Alcontrol Laboratories for analysis.

The results for each sample location D1, D2, D3 and D4 are included in ***Appendix B***. In summary the air quality at all monitoring locations was good, with no exceedances recorded during the 2009 monitoring period. Dust levels were highest at D3, in the northeastern corner of the site. Although the dust deposition limit of 350 mg/m^2/day was not exceeded the highest recorded concentration for the site (223mg/m^2/day) was recorded during the August monitoring event at D3.

Table 7-1 Dust Monitoring Results

Monitoring Period		D1	D2	D3	D4	Source of Dust
From	To	mg/m^2/d	mg/m^2/d	mg/m^2/d	mg/m^2/d	
26-01-09	**23-02-09**	124	73	150	94	**No Exceedances**
16-06-09	**14-07-09**	12	5	35	14	**No Exceedances**
08-07-09	**05-08-09**	65.5	94.1	223*	160	**No Exceedances**

Sample was broken by Laboratory, additional sample was conducted between 14/08/09 and 11.09/09.

7.1 NOISE EMISSIONS

Locations:	N1: E301630, N228450	N2: E301580, N228550
	N3: E301670, N228555	N4: E301630, N228420

TOBIN Consulting Engineers carried out a noise survey as required by Schedule E of the waste licence. Both daytime and nighttime noise was monitored in December 2009. A copy of the report is attached in ***Appendix C***.

The analysis concludes that there is no significant noise impact caused by the facility. Noise levels recorded at all EPA agreed noise monitoring locations contain noise emissions from RILTA, noise emissions from adjacent sites, from traffic on the road network of Greenogue Business Park and from low flying aircraft from nearby Baldonnel Airport. The levels are typical of noise levels resulting from industrial activities and are within the site and therefore not a reflection of emissions at noise sensitive locations.

There were no impulsive noise emissions audible at any of the monitoring locations during the 2009 monitoring event. With regard to tonal emissions, Figures 1-4 in ***Appendix C*** indicates that tonal components were present at 2.no night monitoring locations (N2 & N3), however no tonal emissions were recorded at any location during the daytime monitoring event.

8 RESOURCE AND ENERGY CONSUMPTION SUMMARY

The main energy use at RILTA includes:

- Gas
- Electricity
- Water

A review of electricity and gas bills for the period from 01/01/09 to 31/12/09 shows that RILTA used the following quantities.

Table 8-1 Resource and energy consumption

Energy	Units	Figures for 2009	Figures for 2008	Figures for 2007
Gas	KwH	525,347	1,663,901	977,260
Electricity	KwH	472,300	477,591	320,000
Water	m³	8,880	9,122	7,100
Diesel	L	10,843	11,667	8,470
Oil	L	65,884	0	0

Rilta Environmental changed from a gas fired burner to an oil fired burner, as a larger burner was required for the oil treatment process. Hence the sharp decrease in gas and increase in oil usage.

9 DEVELOPMENT/ INFRASTRUCTURAL WORKS

The only infrastructural works that have taking place during 2009 have been in the oil division and will be fully detailed in the licence review for W0192-03.

10 ENVIRONMENTAL MANAGEMENT SYSTEM

The Environmental Management System has been detailed in the letter forwarded to the Environmental Protection Agency (EPA), 24th February 2005.

11 SCHEDULE OF ENVIRONMENTAL OBJECTIVES AND TARGETS

The Schedule of Environmental Objectives and Targets has been detailed in the letter forwarded to the Environmental Protection Agency (EPA), 24th February 2005. The schedule and associated Environmental Management Program was reviewed and updated periodically during the year. The majority of objectives and targets during this year were achieved and the main projects completed involved the following:

- Increase environmental awareness among Rilta staff.
- Promote best practice processing of waste generated on site.
- Reduce fugitive emissions.
- Improve site house keeping.
- Install a further chem-store for difficult to segregate wastes such as Class 4.2.
- Review of segregation in Bay 7.
- Insistence on all paint suppliers to produce annual VOC reports
- Implement the ‘treat waste with waste’ best practice method on an ongoing basis.
- Possibility of using boron electrochemical charged ions as a means of reducing COD.
- To be a good and considerate neighbour.

An updated log of objectives and targets is included as ***Appendix D****.*

12 WRITTEN PROCEDURES

New written procedures for 2009 details the methods for waste acceptance and operational procedures, ensuring the equipment is operated correctly, while providing for the safety of all staff, visitors and contractors working on the integrated waste site premises at Greenogue Business Park.

Below are new procedures, which were drawn up in 2009.

- Contaminated soil acceptance (Update)
- Contaminated soil Management (Update)
- Waste Oil Acceptance
- On-site filling of Tankers with re-processed oil
- Processed Oil Delivery

A copy of RILTA's Environmental new written procedures are is included in ***Appendix E***.

13 BUND TESTING REPORT

The Tank, Pipeline and bund testing and inspection report was lodged with the Environmental Protection Agency (EPA) in November 2008. Further testing of the underground storage tanks was conducted and a report furnished to the Agency during April 2009.

14 CALIBRATION CERTIFICATE ON OIL HEATING TEMPERATURE CUT OFF DETECTION UNIT

The Spirax Sarco Temperature Control System is only recently installed and is 'CE' certified, calibration will occur later in 2010.

15 BOILER EFFICIENCY

RILTA commission an independent boiler engineer (Renick Engineering Limited) to carry out an annual assessment of the efficiency of the natural gas boiler at the facility.

The results of the boiler test on March 2010 are shown below.
A copy of the test certificate is attached in ***Appendix F***.

Table 15-1 Boiler Efficiency Test Results

Parameter	March 15th 2010
Oxygen	6.2 %
Carbon Monoxide	3 PPM
Efficiency	85.5 %

16 REPORTED INCIDENTS

Three breaches of the emission limit values were notified to the Agency in 2009. These were breaches relating to non-compliances of Mineral Oil, Copper and Zinc limits from the trade effluent. While the situation is being monitored, all three exceedances were isolated incidences and unrepresentative of the average values. **Note:** Air Emissions Report was received by licensee in late March 2010, therefore breach was not reported to the Agency during 2009.

17 COMPLAINTS SUMMARY

There were three documented complaints from Rilta's industrial neighbours in 2009, all regarding odour. Rilta have met with their industrial neighbours on a number of occasions and are managing the issue.

18 REVIEW OF NUISANCE CONTROLS

The nuisance controls in operation at the site by RILTA are outlined in Section 3.6 of the Environmental Impact Statement. Reviews of nuisance control are outlined and updated as part of the Environmental Management Program. A review of fugitive odours at the facility was ongoing during 2009, this will continue throughout 2010.

19 FINANCIAL PROVISION

A proposal in respect of the financial provision was submitted to the Environmental Protection Agency for agreement, in June 2005.

20 SOLVENT MANAGEMENT PLAN

A solvent management plan was prepared in 2005 with a view to reduce both solvent raw material usage and VOC emissions.

There was an increase in the amount of VOC solvents used (3690 Kg of VOC) in the drum division during 2009. Rilta continues to use high solid content paint, which keeps the VOC levels low. However, there was a much larger throughput through the Drum Division in 2009. This increase in solvent use can be attributed to an increase in reconditioning of drums. During previous years new drums were used and clients did not request drums reconditioned drums.

The volume of solvent used in the maintenance of the drum division vents over the last five years is as follows:

Table 20-1 Solvent Volumes 2005 - 2009

Year	Solvent Volume (Kg)
2005	1742
2006	1386
2007	2,640
2008	2624
2009	3690

21 WASTE RECOVERY REPORT

The details for waste recovered in the period 1/1/09 – 31/12/09 has been furnished to the Agency as part of the 2009 Waste Survey and PRTR Report.

22 REPORT ON STAFF TRAINING

Rilta Environmental’s training program also included two training days for all Rilta staff based on the 2005 legislation on Health, Safety & Welfare in the workplace. A list of all training undertaken from is as follows:

- Dangerous Goods Safety Advisors
- Jetting training
- Counter Balance Forklift training
- Tanker Training
- Manual Handling
- Fire Safety
- Safe Pass
- Chemical Handling
- Confined Space Entry Training
- Hazardous Chemical Training

Rilta undertake training on an ongoing basis with staff receiving training specific to their roles in the company. Environmental training includes confined space entry, ADR/DGSA, chemical handling, Haz-Chem and other relevant training regimes.

23 VOLUME OF WASTEWATER PRODUCED AND VOLUME OF WASTEWATER TRANSPORTED OFF-SITE

The waste treatment department is effectively the sole producer of wastewater on site. Other procedures may produces miniscule amounts of wastewater but these would be put through the waste treatment system so the trade effluent figures accurately reflect the wastewater produced on site from 01/01/09 to 31/12/09, which amounts to 29,195m³.

It may be noted that water is used to mix process polymer for both the effluent and sludge treatment processes, which therefore uses small volumes of water additional to that above.

The fraction of treated waste comprised of dried sludge and clean oil is as follows:

- Dried Sludge 4%
- Clean Oil Product 7%

This gives a non-aqueous total of 11%, a large decrease on 2008 (17%).

APPENDIX A

Air Emissions Report

ODOUR & ENVIRONMENTAL ENGINEERING CONSULTANTS

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ROUND 1 2009-MONITORING OF VOC EXHAUST STACK CONCENTRATIONS AT RILTA LTD, BLOCK 402, GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN

PREPARED BY:	Dr. John Casey
ATTENTION:	Ms Siobhan Tinnelly
DATE:	08th Jan 2010
REPORT NUMBER:	2010A26(1)
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REVIEWERS:	

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Section **Page number**

Document Amendment Record

Client: ***Rilta Limited***

Description: Round 1 2009 - Monitoring of VOC concentrations at Rilta Ltd, Block 402, Greenogue Business Park, Rathcoole, Co. Dublin

Project Number: 2010A26(1)			**Document Reference:** Round 1 2009 - Monitoring of VOC concentrations at Rilta Ltd, Block 402, Greenogue Business Park, Rathcoole, Co. Dublin		
2010A26(1)	Document for review	JWC	BAS	BAS	08/01/2010
Revision	**Purpose/Description**	**Originated**	**Checked**	**Authorised**	**Date**
ODOUR monitoring IRELAND					

EXECUTIVE SUMMARY

Odour Monitoring Ireland was commissioned by Rilta Environmental Ltd to perform Volatile Organic Compound (VOC) monitoring of the three licensed emission points located within their facility in Block 402, Greenogue Business Park, Rathcoole, Co. Dublin.

Monitoring was performed using pre-concentration upon sorbent tubes and analysis via gas chromatography mass spectrometry (GCMS).

It was concluded from the study that:

- The results indicate that emissions to atmosphere of total organics (as carbon) from emission point A1, A2 and A3 were in compliance with the mass emission limit values stated in the Waste Licence Number 192-02.
- The volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with set volumetric airflow limit values as per Waste Licence Number 192-02.

1. Introduction

Odour Monitoring Ireland was commissioned by Tobin Consulting Engineers to perform monitoring of Volatile Organic Compound (VOC) concentrations emissions from a series of three licensed emission points at the Rilta Ltd, Block 402, Greenogue Business Park, Rathcoole, Co. Dublin. The monitoring was carried out to determine compliance with the emission limit values stated within Schedule C3 of Waste Licence 192-02.

2. Material and Methods

This section describes the materials and methods used throughout the study period carried out in July 2009.

2.1 Monitoring locations

Table 2.1 outlines the three monitoring points where VOC monitoring was performed on the 17th July 2009.

Table 2.1. Monitoring points for emissions to atmosphere.

Analysis Monitoring Code	EPA location code	Location
A1	A1	Drum Washer Stack
A2	A2	Paint Spray Booth Stack
A3	A3	Drying Tunnel Stack

2.2 Airflow and temperature measurement

Airflow rate measurement was performed in accordance with EN13284-1:2002 where possible. The following equipment was used through the airflow rate assessment. These included:

- Testo handheld and differential pressure sensors,
- L type pitot probe,
- PT100 temperature probe,

The following control procedure was used through the measurement sequence:

1. Approximately 5 duct diameters were available between the measurement point and the nearest constriction,
2. The temperature profile across the stack was verified and did not differ by more than 5% from the average absolute temperature of the duct cross section,
3. Eight individual samples points excluding the duct centre point was used to determine the average flow at specified locations across the duct diameter. No sample point was located within 20 mm of the duct wall.
4. The difference in the average airflow velocity across each diameter did not exceed 5% of the mean for all the diameters (2 in total).
5. The L type pitot was checked for any burrs and obstructions in the pitot orifices,
6. The absence of swirling flow was determined in accordance with Section 5 and Annex C of the standard.

The airflow rate measurement was used to ascertain the volumetric airflow in accordance with Schedule C.3 of licence 192-02 (Emissions to atmosphere).

2.3. VOC monitoring of emission points A1, A2 and A3.

2.3.1 Sampling of VOC's for emission points A1, A2 and A3

In order to obtain air samples for VOC assessment, a static sampling method was used whereby air samples were taken from the airstream and pre concentrated upon the sorption tube for analysis. A charcoal/anasorb sorbent was chosen to efficiently bind and pre-concentrate speciated VOC for analysis by GCFID/GCMS in accordance with established and accredited methodologies. Sealed sorbent tubes were used throughout the study to maintain repeatability and integrity. In addition, the sorbent tube has a second plug to detect any breakthrough. Each tube contained a minimum of 200 mg of sorbent. All sampling for speciated VOC's was performed in accordance with EN13649:2002.

3. Results

This section discusses the results obtained through the study.

3.1 Assessment criteria

The results obtained from the assessment have been compared with the emission limit values outlined within Waste licence 192-02.

Table 3.1. Emission Limit Values as stated in Waste Licence 192-02.

Emission Point	**Emission limits**	**Total Organic Carbon (as C)**	
	Nm^3 hr^{-1}	**mg Nm^{-3}**	**kg/hr**
A1	5,292	-	1.0
A2	5,292	-	0.10
A3	2,520	-	0.30

3.2 Results of airflow and temperature measurement

The results of the airflow and temperature measurement are presented in *Table 3.2*.

Table 3.2. Airflow rate and temperature measurements at three emission points.

Emission Point	**Temperature (Kelvin)**	**Limit Volumetric airflow rate (Nm^3 hr^{-1})**	**Measured Volumetric airflow rate (Nm^3 hr^{-1})**
A1	291.15	5,292	2,720
A2	312.15	5,292	5,045
A3	292.15	2,520	1,588

3.3 Results of Volatile Organic Compound (VOC) measurement

The results of VOC measurements are presented in *Table 3.3*, *3.4* and *3.5*.

Table 3.3. Results of VOC Monitoring at Emission Point A1.

Library/ID	**Conc. of VOC (mgC/ Nm^3)**	**Mass Flow of Speciated VOC (kg/hr)**
Total Organic Carbon (TOC as carbon)	50.12mgC/Nm^3	0.15 kg/hr
Total Organic Carbon (TOC as carbon) Limit value	-	1.0 kg/hr

Table 3.4. Results of VOC Monitoring at Emission Point A2.

Library/ID	**Conc of VOC (mgC/Nm^3)**	**Mass Flow of Speciated VOC (kg/hr)**
Total Organic Carbon (TOC as carbon)	18 mgC/Nm^3	0.09 kg/hr
Total Organic Carbon (TOC as carbon) Limit value	-	0.10 kg/hr

Table 3.5. Results of VOC Monitoring at Emission Point A3.

Library/ID	**Conc of Speciated VOC (mg Nm^{-3} as C)**	**Mass Flow of Speciated VOC (kg/hr)**
Total Organic Carbon (TOC as carbon)	95 mgC/Nm^3	0.17 kg/hr
Total Organic Carbon (TOC as carbon) Limit value	-	0.30 kg/hr

4. Discussion of results

The results of the VOC monitoring survey carried out on the 17th July 2009 are presented in *Tables 3.2 to 3.5*. These results indicate that emissions to atmosphere of total organics (as carbon) from emission point A1, A2 and A3 were in compliance with the mass emission limit values stated in the Waste Licence Number 192-02.

The volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with set volumetric airflow limit values as per Waste Licence Number 192-02.

Characterisation of VOC's are presented for monitoring locations A1, A2 and A3 within *Appendix I*.

5. Conclusions

The following conclusions were drawn from the study:

- The results indicate that emissions to atmosphere of total organics (as carbon) from emission point A1, A2 and A3 were in compliance with the mass emission limit values stated in the Waste Licence Number 192-02.

- The volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with set volumetric airflow limit values as per Waste Licence Number 192-02.

6. *Appendix I* - Characterisations of VOC’s detected at monitoring locations A1, A2 and A3.

A1	**Compound**	**Compound Conc. (mg/m^3)**
	Nonanal	2.12
	Ethylbenzene	12.05
	Tetracosane	3.21
	1-Decanol, 2-hexyl-	4.61
	Octacosane	3.45
	1, 2, 3 Trimethyl benzene	9.54
	Total VOC's	**50.12**

A2	**Compound**	**Compound Conc. (mg/m^3)**
	Ethylbenzene	10.41
	Xylene m/p	2.29
	Xylene o	3.28
	1,2,4 Trimethyl benzene	0.45
	Total VOC's	**18**

A3	**Compound**	**Compound Conc. (mg/m^3)**
	Ethylbenzene	12.47
	m & p-Xylene	10.89
	O Xylene	6.54
	Benzene, 1,3-dimethyl-	11.45
	Naphthalene	6.24
	Dibutyl phthalate	4.23
	Heptane, 2,5-dimethyl-	8.47
	Toluene	11.58
	Cyclohexane, methyl-	6.58
	Total VOC's	**95**

ODOUR & ENVIRONMENTAL ENGINEERING CONSULTANTS

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www.odourireland.com

ROUND 2 2009-MONITORING OF VOC EXHAUST STACK CONCENTRATIONS AT RILTA LTD, BLOCK 402, GREENOGUE BUSINESS PARK, RATHCOOLE, CO. DUBLIN

PREPARED BY:	Dr. John Casey
ATTENTION:	Ms Siobhan Tinnelly
DATE:	08th Jan 2010
REPORT NUMBER:	2010A27(1)
DOCUMENT VERSION:	Document Ver. 001
REVIEWERS:	

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Section **Page number**

Document Amendment Record

Client: ***Rilta Limited***

Description: Round 2-Monitoring of VOC concentrations at Rilta Ltd, Block 402, Greenogue Business Park, Rathcoole, Co. Dublin

Project Number: 2010A27(1)			**Document Reference:** Round 2 2009-Monitoring of VOC concentrations at Rilta Ltd, Block 402, Greenogue Business Park, Rathcoole, Co. Dublin		
2010A27(1)	Document for review	JWC	BAS	BAS	08/01/2010
Revision	**Purpose/Description**	**Originated**	**Checked**	**Authorised**	**Date**
ODOUR monitoring IRELAND					

EXECUTIVE SUMMARY

Odour Monitoring Ireland were commissioned by Rilta Environmental Ltd to perform Volatile Organic Compound (VOC) monitoring of the three licensed emission points located within their facility in Block 402, Greenogue Business Park, Rathcoole, Co. Dublin.

Monitoring was performed using pre-concentration upon sorbent tubes and analysis via gas chromatography mass spectrometry (GCMS).

It was concluded from the study that:

- The results indicate that emissions to atmosphere of total organics (as carbon) from emission point A1 and A3 were in compliance with the emission limit values stated in the Waste Licence Number 192-02.
- The results indicate that emissions to atmosphere of total organics (as carbon) from emission points A2 was not in compliance with the emission limit values for the total concentration of VOC (as Carbon) stated in the Waste Licence Number 192-02.
- The volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with set volumetric airflow limit values as per Waste Licence Number 192-02.

1. Introduction

Odour Monitoring Ireland was commissioned by Tobin Consulting Engineers to perform monitoring of Volatile Organic Compound (VOC) concentrations emissions from a series of three licensed emission points at the Rilta Ltd, Block 402, Greenogue Business Park, Rathcoole, Co. Dublin. The monitoring was carried out to determine compliance with the emission limit values stated within Schedule C3 of Waste Licence 192-02.

2. Material and Methods

This section describes the materials and methods used throughout the study period carried out in December 2009.

2.1 Monitoring locations

Table 2.1 outlines the three monitoring points where VOC monitoring was performed in December 2009.

Table 2.1. Monitoring points for emissions to atmosphere.

Analysis Monitoring Code	EPA location code	Location
A1	A1	Drum Washer Stack
A2	A2	Paint Spray Booth Stack
A3	A3	Drying Tunnel Stack

2.2 Airflow and temperature measurement

Airflow rate measurement was performed in accordance with EN13284-1:2002 where possible. The following equipment was used through the airflow rate assessment. These included:

- Testo handheld and differential pressure sensors,
- L type pitot probe,
- PT100 temperature probe,

The following control procedure was used through the measurement sequence:

1. Approximately 5 duct diameters were available between the measurement point and the nearest constriction,
2. The temperature profile across the stack was verified and did not differ by more than 5% from the average absolute temperature of the duct cross section,
3. Eight individual samples points excluding the duct centre point was used to determine the average flow at specified locations across the duct diameter. No sample point was located within 20 mm of the duct wall.
4. The difference in the average airflow velocity across each diameter did not exceed 5% of the mean for all the diameters (2 in total).
5. The L type pitot was checked for any burrs and obstructions in the pitot orifices,
6. The absence of swirling flow was determined in accordance with Section 5 and Annex C of the standard.

The airflow rate measurement was used to ascertain the volumetric airflow in accordance with Schedule C.3 of licence 192-02 (Emissions to atmosphere).

2.3. VOC monitoring of emission points A1, A2 and A3.

2.3.1 Sampling of VOC's for emission points A1, A2 and A3

In order to obtain air samples for VOC assessment, a static sampling method was used whereby air samples were taken from the airstream and pre concentrated upon the sorption tube for analysis. A charcoal/anasorb sorbent was chosen to efficiently bind and pre-concentrate speciated VOC for analysis by GCFID/GCMS in accordance with established and accredited methodologies. Sealed sorbent tubes were used throughout the study to maintain repeatability and integrity. In addition, the sorbent tube has a second plug to detect any breakthrough. Each tube contained a minimum of 200 mg of sorbent. All sampling for speciated VOC's was performed in accordance with EN13649:2002.

3. Results

This section discusses the results obtained through the study.

3.1 Assessment criteria

The results obtained from the assessment have been compared with the emission limit values outlined within Waste licence 192-02.

Table 3.1. Emission Limit Values as stated in Waste Licence 192-02.

Emission Point	Emission limits	Total Organic Carbon (as C)	
	$Nm^3 hr^{-1}$	mgC/Nm^3	kg/hr
A1	5,292	-	1.0
A2	5,292	-	0.10
A3	2,520	-	0.30

3.2 Results of airflow and temperature measurement

The results of the airflow and temperature measurement are presented in *Table 3.2*.

Table 3.2. Airflow rate and temperature measurements at three emission points.

Emission Point	Temperature (Kelvin)	Limit Volumetric airflow rate ($Nm^3 hr^{-1}$)	Measured Volumetric airflow rate ($Nm^3 hr^{-1}$)
A1	292.15	5,292	2,589
A2	314.15	5,292	5,146
A3	294.15	2,520	1,601

3.3 Results of Volatile Organic Compound (VOC) measurement

The results of VOC measurements are presented in *Table 3.3*, *3.4* and *3.5*.

Table 3.3. Results of VOC Monitoring at Emission Point A1.

Library/ID	Conc. of VOC (mgC/ Nm^3)	Mass Flow of Speciated VOC (kg/hr)
Total Organic Carbon (TOC as carbon)	54.18 mgC/Nm^3	0.14 kg/hr
Total Organic Carbon (TOC as carbon) Limit value	-	1.0 kg/hr

Table 3.4. Results of VOC Monitoring at Emission Point A2.

Library/ID	Conc of VOC (mgC/Nm^3)	Mass Flow of Speciated VOC (kg/hr)
Total Organic Carbon (TOC as carbon)	150.85 mgC/Nm^3	0.77 kg/hr
Total Organic Carbon (TOC as carbon) Limit value	-	0.10 kg/hr

Table 3.5. Results of VOC Monitoring at Emission Point A3.

Library/ID	Conc of Speciated VOC (mg Nm^{-3} as C)	Mass Flow of Speciated VOC (kg/hr)
Total Organic Carbon (TOC as carbon)	89.84 mgC/Nm^3	0.14 kg/hr
Total Organic Carbon (TOC as carbon) Limit value	-	0.30 kg/hr

4. Discussion of results

The results of the VOC monitoring survey carried out on the 01st December 2009 are presented in *Tables 3.2 to 3.5*. These results indicate that emissions to atmosphere of total organics (as carbon) from emission point A1 and A3 were in compliance with the emission limit values stated in the Waste Licence Number 192-02.

These results indicate that emissions to atmosphere of total organics (as carbon) from emission points A2 was not in compliance with the emission limit values for the total concentration of VOC (as Carbon) stated in the Waste Licence Number 192-02.

The volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with set volumetric airflow limit values as per Waste Licence Number 192-02.

5. Conclusions

The following conclusions were drawn from the study:

- The results indicate that emissions to atmosphere of total organics (as carbon) from emission point A1 and A3 were in compliance with the emission limit values stated in the Waste Licence Number 192-02.

- The results indicate that emissions to atmosphere of total organics (as carbon) from emission points A2 was not in compliance with the emission limit values for the total concentration of VOC (as Carbon) stated in the Waste Licence Number 192-02.

- The volumetric airflow rate measurements performed on emission points A1, A2 and A3 demonstrated compliance with set volumetric airflow limit values as per Waste Licence Number 192-02.

APPENDIX B

Dust Certificates

ALcontrol Laboratories (Dublin)

18a Rosemount Business Park,
Ballycoolin,
Dublin 11
Ireland
Tel: +353 (0) 1 8829893
Fax: +353 (0) 1 8829895

CERTIFICATE OF ANALYSIS

Client: Tobin Consulting Engineers (Dublin)

Block 10-4
Blanchardstown Corporate Park
Blanchardstown
Dublin 15
Ireland

Attention: Dave Corrigan

Authorised On: 6 March, 2009

Our Reference: 09-B00774/01

Your Reference: 3084

Location:

A total of 4 samples was received for analysis on Monday, 23 February 2009. Accredited laboratory tests are defined in the log sheet, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our final report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

Signed

Dylan Halpin

Lorraine Mc Namara

Dylan Halpin
Team Leader Project Co-ordination

Lorraine McNamara
General Manager

Mark Butler

Compiled By ....
Mark Butler

Linda Whelan
ALcontrol Ireland
Unit 18a Rosemount Business Park
Ballycoolin
Dublin 11
IRELAND

23 July 2009

TEST REPORT

Our Report Number: 09-65465

Your Order Reference: N/A

4 water samples received on 14/07/2009

Final instructions received on 14/07/2009

Project Code: 09-B01376/01

Laboratory analysis started on 16 July 2009
All laboratory analysis completed by 23 July 2009

Sharon Googh	Daljit Jandu
Project Co-Ordinator	Project Co-Ordinator
ALCONTROL LABORATORIES	**ALCONTROL LABORATORIES**

This test report shall not be reproduced, except in full, without written approval of the laboratory.

Results contained herein relate only to the samples tested. Test methods are documented in house procedures or where appropriate standard methods. Non accredited tests (if applicable) are identified on each page. Procedures for sampling are outside the scope of the laboratory UKAS accreditation. Opinions and interpretations expressed herein are outside the scope of our UKAS accreditation. All samples connected with this report , including any 'on hold', will be stored and disposed of according to company policy. A copy of this policy is available on request.

ALcontrol Laboratories
Table Of Results

Job Number : 09-65465
Matrix : Water
Project Code: 09-B01376/01

Client : Alcontrol Laboratories

Sample Reference	**D1**	**D2**	**D3**	**D4**		**Method No**	**Units**	**LOD**
Sample Depth (m)	**-**	**-**	**-**	**-**				
Date Sampled	**-**	**-**	**-**	**-**				
Date Scheduled	**14/07/09**	**14/07/09**	**14/07/09**	**14/07/09**				
Laboratory Reference No	**389656**	**389657**	**389658**	**389659**				
Analysis								
Suspended Solids @ 105ºC	12	5	35	14		029W[I]	mg/l	5
Dust Monitoring (Total Particulates)	< 50	< 50	< 50	< 50		029W	mg/m2/day	50

[I] ISO 17025 accredited.
[M] MCERTS accredited for sand, loam and clay.

ALcontrol Laboratories
Table Of Results - Appendix

Job Number : 09-65465

Client : Alcontrol Laboratories

Project Code: 09-B01376/01

Summary of methods contained within report :

Method No.	Reference	Description	Wet/Dry Analysis
029W	In-house method based on MEWAM "Suspended, Settleable and Total Dissolved Solids in Waters and Effluents", HMSO, 1980	Determination of solids in aqueous samples by filtration and gravimetry	

Soil results are expressed on a dry weight basis. Where the test uses as-received sample, a moisture correction factor is applied to the wet weight result. This factor is determined gravimetrically using weight loss on drying at 30º (+/-5) C.

Appendix

Code	Description
On Results	
*	Detection limit(s) raised due to matrix interference
¥	Detection limit(s) raised due to reduced amount of sample available for analysis
‡	Dilution factor applied due to nature of sample
NSM	No suspect material detected This must not be interpreted as a statement that there is no asbestos in the sample as loose fibres may not be found during visual screening
$	Analysis sub-contracted
U/S	Analysis unsuitable for sample due to its matrix or properties
I/S	Insufficient sample
M/S	Sample cannot be located within the laboratory
ND	Not detected (below relevant analytical detection limit)
ç	Sample filtered prior to analysis
§	Please note product present, therefore this result is for indicative purpose only
On the Sample Numbers	
†	Sample type outside the scope of our MCERTS accreditation since matrix not included in method validation
¢	Unsuitable for analysis due to asbestos content
General Statements	
æ	Please note TOC's & LOI's have been repeated and the apparently anomalous results confirmed
¶	UKAS and/or MCERTS accreditation removed due to duration of sample in laboratory prior to testing
¤	The BOD analysis was carried out prior to the COD analysis and included an oily layer, which is the likely cause of the anomalous results
Note:	Analysis carried out for organic compounds on water samples containing free product is on a "best endeavour" basis
Note:	All results calculated from organic carbon on a dry weight basis
Note:	Fe(II) and dissolved Fe are analysed by different methods, sometimes leading to slight discrepancy between results
Note:	"Total" results calculated by summing individual components are not rounded
Note:	The reporting limit stated in the LOD column is the standard method reporting limit, derived statistically from validation data, however it is occasionally necessary to raise reporting limits due to matrix interference or limited sample availability
Note:	During soil preparation, best efforts are made to produce analytical subsamples representative of the entire submitted sample, without exclusion of stones

ALcontrol Laboratories Ireland

Test Schedule

Ref Number: **09-B00774/01**
Client: Tobin Consulting Engineers (Dublin)
Date of Receipt: 23/02/2009

Sample Type: **DUST**
Location:
Client Contact: Dave Corrigan
Client Ref: 3084

			Detection Method	GRAVIMETRIC	GRAVIMETRIC	GRAVIMETRIC
UKAS Accredited [Testing Laboratory] No. 1291						
ALcontrol Reference	**Sample Identity**	**Other ID**	**P / V**	**Inorganic Dust**	**Dust Analysis**	**Organic Dust**
09-B00774-S0021-A01	D1	26/01/09 - 23/02/09	Non-Alcontrol Glass Jar	X	X	X
09-B00774-S0022-A01	D2	26/01/09 - 23/02/09	Non-Alcontrol Glass Jar	X	X	X
09-B00774-S0023-A01	D3	26-01/09 - 23/02/09	Non-Alcontrol Glass Jar	X	X	X
09-B00774-S0024-A01	D4	26/01/09 - 23/02/09	Non-Alcontrol Glass Jar	X	X	X

Notes : NUMERIC VALUES INDICATE ADDITIONAL SCHEDULING

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

ALcontrol Laboratories Ireland

Test Schedule Summary

Ref Number: **09-B00774/01**
Client: Tobin Consulting Engineers (Dublin)
Date of Receipt: 23/02/2009

Sample Type: **DUST**
Location:
Client Contact: Dave Corrigan
Client Ref: 3084

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

SCHEDULE	METHOD	TEST NAME	TOTAL
X	GRAVIMETRIC	Dust Analysis	4
X	GRAVIMETRIC	Inorganic Dust	4
X	GRAVIMETRIC	Organic Dust	4

☐ Interim

☑ Validated

ALcontrol Laboratories Ireland

Table Of Results

Ref Number: 09-B00774/01

Client: Tobin Consulting Engineers (Dublin)

Date of Receipt: 23/02/2009
(of first sample)

Sample Type: DUST

Location:

Client Contact: Dave Corrigan

Client Ref: 3084

		Detection Method	GRAVIMETRIC	GRAVIMETRIC	GRAVIMETRIC
		Method Detection Limit	<5mg	<5mg/day/sq_m	<5mg/sq_m
UKAS Accredited [Testing Laboratory] No. 1291					
ALcontrol Reference	**Sample Identity**	**Other ID**	**Dust Analysis**	**Inorganic Dust**	**Organic Dust**
			mg	mg/day/sq_m	mg/sq_m
09-B00774-S0021	D1	26/01/09 - 23/02/09	124	100	24
09-B00774-S0022	D2	26/01/09 - 23/02/09	73	65	8
09-B00774-S0023	D3	26-01/09 - 23/02/09	150	130	20
09-B00774-S0024	D4	26/01/09 - 23/02/09	94	74	20

Notes : METHOD DETECTION LIMITS ARE NOT ALWAYS ACHIEVABLE DUE TO VARIOUS CIRCUMSTANCES BEYOND OUR CONTROL.

NDP = NO DETERMINATION POSSIBLE

Checked By : Mark Butler

Printed at 10:43 on 11/03/2009

* SUBCONTRACTED TO OTHER LABORATORY / ** SAMPLES ANALYSED AT THE CHESTER LABORATORY

APPENDIX

APPENDIX

1. Results are expressed as mg/kg dry weight (dried at 30°C) on all soil analyses except for the following: NRA Leach tests, flash point, and ammoniacal N_2 by the BRE method, VOC, PRO, Cyanide, Acid Soluble Sulphide,TPH by IR, OFGs and SEM.

2. Samples will be run in duplicate upon request, but an additional charge may be incurred.

3. A sub sample of all samples received will be retained free of charge for one month for soils and one month for waters (sample size permitting), but may then be discarded unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage.

4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.

5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.

6. When requested, an asbestos screen is done in-house on soils and if no fibres are found will be reported as NFD – no fibres detected. If fibres are detected, then identification and quantification is carried out by ALcontrol Technichem or Alcontrol Shutlers in the UK . If a sample is suspected of containing asbestos, then drying and crushing will be suspended on that sample until the asbestos results are known. If asbestos is present, then no analysis requiring dry sample are undertaken.

7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace is present in the volatile sample.

8. NDP – No Determination Possible due to insufficient/unsuitable sample.

9. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.

10. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.

Last updated February 2005

ALcontrol Laboratories

Unit 18A
Rosemount Business Park
Ballycoolin
Dublin 11
Tel : (0035) 3188 29893

Tobin Consulting Engineers
Block 10-4
Blanchardstown Corporate Park
Blanchardstown
Dublin
Dublin 15

Attention: David Corrigan

CERTIFICATE OF ANALYSIS

Date: 13 August 2009

Job: D_TOBIN_GWY-27

SDG Reference: 090806-79

Report No.: 59683

Your Reference: 3084 (1250)

Location: Rilta Enviro Ltd

A total of 3 samples was received on Wednesday August 05, 2009 and completed on Tuesday August 11, 2009. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occuring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample. Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Declan Burns

Lab Manager

Validated

ALcontrol Laboratories Analytical Services

Job: D_TOBIN_GWY-27

Customer: Tobin Consulting Engineers

Client Reference: 3084 (1250)

Attention: David Corrigan

Location: Rilta Enviro Ltd

Order No.: 1525

Report No: 59683

Sample ID	**Depth**	**Container**	**Sample Type**	Dust in Water All
D1		1l green glass	LIQUID	X
D2		1l green glass	LIQUID	X
D4		1l green glass	LIQUID	X

Validated

ALcontrol Laboratories Analytical Services

Job:	D_TOBIN_GWY-27	**Customer:**	Tobin Consulting Engineers		
Client Reference:	3084 (1250)	**Attention:**	David Corrigan		
Location:	Rilta Enviro Ltd	**Order No.:**	1525	**Report No:**	59683

Notification of NDP's (No determination possible).

Sample No	Sample ID	Depth (m)	Test	Comment
378526	D3		Dust in Water	Sample container broken

Validated

ALcontrol Laboratories Analytical Services

Job: D_TOBIN_GWY-27

Customer: Tobin Consulting Engineers

Client Reference: 3084 (1250)

Attention: David Corrigan

Location: Rilta Enviro Ltd

Order No.: 1525

Report No: 59683

Table of Results

Dust in Water

Results Legend
~~~~~~~~~~~~~
ISO17025 Accredited.
m MCERTS accredited.
* sub contracted test.

	Sample ID			D1	D2	D4
	Depth(m)					
	Sample Type			Water(GW/SW)	Water(GW/SW)	Water(GW/SW)
	Sample received date			05/08/2009	05/08/2009	05/08/2009
	Sampled date					
	SDG Ref			090806-79	090806-79	090806-79
	Sample Ref			378515	378523	378535
	LoD	Units	Method			
Dust	<0.026	mg/m2/day	TM253	65.5	94.1	160
~~~~~~~~~~~~~

Validated

ALcontrol Laboratories Analytical Services

Job: D_TOBIN_GWY-27
Customer: Tobin Consulting Engineers
Client Reference: 3084 (1250)
Attention: David Corrigan
Location: Rilta Enviro Ltd
Order No.: 1525
Report No: 59864

Test Completion dates

SDG reference: 090806-79

Sample ID	Depth	Type	Dust in Water
D1		LIQUID	11/08/2009
D2		LIQUID	11/08/2009
D4		LIQUID	11/08/2009

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following:
   NRA Leach tests, flash point, ammonium as NH_4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
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21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
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EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKEN SVOC	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM/EA	SOLID PHASE EXTRACTION	GC MS
TRIAZINE HERBS	DCM/EA	SOLID PHASE EXTRACTION	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
SAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
UNSAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	DCM	LIQUID/LIQUID EXTRACTION	EZ FLASH

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
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Visual Estimation Of Fibre Content.

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Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

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Asbestos Type	Common Name
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Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

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Last updated 25 June 2009

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6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as ‘no asbestos containing material detected’. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP – No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. **Surrogate recoveries** – Most of our organic methods include surrogates, the recovery of which is monitored and reported. For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted.
13. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
14. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).
15. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
16. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
17. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials – whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 – C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Last updated 25 June 2009

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKEN SVOC	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM/EA	SOLID PHASE EXTRACTION	GC MS
TRIAZINE HERBS	DCM/EA	SOLID PHASE EXTRACTION	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
SAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
UNSAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	DCM	LIQUID/LIQUID EXTRACTION	EZ FLASH

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Last updated 25 June 2009

ALcontrol Laboratories

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Ballycoolin
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Tel : (0035) 3188 29893

Tobin Consulting Engineers
Block 10-4
Blanchardstown Corporate Park
Blanchardstown
Dublin
Dublin 15

Attention: David Corrigan

CERTIFICATE OF ANALYSIS

Date:	21 September 2009		
Job:	D_TOBIN_GWY-31		
SDG Reference:	090911-94	**Report No.:**	62017
Your Reference:			
Location:	Rilta Enviro LTD Free Dust Job		

A total of 1 samples was received on Friday September 11, 2009 and completed on Monday September 21, 2009. Accredited laboratory tests are defined within the report, but opinions, interpretations and on-site data expressed herein are outside the scope of ISO 17025 accreditation. We are pleased to enclose our report, it was a pleasure to be of service to you, and we look forward to our continuing association.

Should this report require incorporation into client reports, it must be used in its entirety and not simply with the data sections alone.

We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials - whether these are derived from naturally occuring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular materials such as concrete, gravel and brick are not accredited if they comprise the major part of the sample. Asbestos testing - we are not accredited for screening soil samples for asbestos fibres. We are only accredited to identify asbestos fibres in bulk material (ACM).

Approved By:

Chris Crutchley
Operations Director - Land UK & I

Job: D_TOBIN_GWY-31

Customer: Tobin Consulting Engineers

Client Reference:

Attention: David Corrigan

Location: Rilta Enviro LTD Free Dust Job

Order No.:

Report No: 62017

Sample ID	Depth	Container	Sample Type	Dust in Water
				All
D3		1l green glass	LIQUID	X

Job:	D_TOBIN_GWY-31	**Customer:**	Tobin Consulting Engineers	
Client Reference:		**Attention:**	David Corrigan	
Location:	Rilta Enviro LTD Free Dust Job	**Order No.:**		**Report No:** 62017

Table of Results

Dust in Water

Results Legend
~~~~~~~~~~~~~
ISO17025 Accredited.
m MCERTS accredited.
* sub contracted test.

	Sample ID			D3
	Depth(m)			
	Sample Type			Water(GW/SW)
	Sample received date			11/09/2009
	Sampled date			11/09/2009
	SDG Ref			090911-94
	Sample Ref			472952
	LoD	Units	Method	
Collection days		Days	TM253	28
Dust	<0.026	mg/m2/day	TM253	223
Inorganic dust		mg/m2/day	TM253	144
Organic Dust		mg/m2/day	TM253	79.2
~~~~~~~~~~~~~

Validated

Test Completion dates

SDG reference: 090911-94

Sample ID	Depth	Type	Dust in Water
D3		LIQUID	21/09/2009

APPENDIX

APPENDIX

1. Results are expressed on a dry weight basis (dried at 35°C) for all soil analyses except for the following:
   NRA Leach tests, flash point, ammonium as NH_4 by the BRE method, VOC TICS, SVOC TICS, TOF-MS SCAN/SEARCH and TOF-MS TICS.
2. Samples will be run in duplicate upon request, but an additional charge may be incurred.
3. If sufficient sample is received a sub sample will be retained free of charge for 30 days after analysis is completed (e-mailed) for both soil jars, tubs and volatile jars. All waters and vials will be discarded 10 days after the analysis is completed (e-mailed). All material removed during an asbestos containing material screen and analysed for the presence of asbestos will be retained for a period of 6 months after the analysis date. All samples received and not scheduled will be disposed of one month after the date of receipt unless we are instructed to the contrary. Once the initial period has expired, a storage charge will be applied for each month or part thereof until the client cancels the request for sample storage. ALcontrol Laboratories reserve the right to charge for samples received and stored but not analysed.
4. With respect to turnaround, we will always endeavour to meet client requirements wherever possible, but turnaround times cannot be absolutely guaranteed due to so many variables beyond our control.
5. We take responsibility for any test performed by sub-contractors (marked with an asterisk). We endeavour to use UKAS/MCERTS Accredited Laboratories, who either complete a quality questionnaire or are audited by ourselves. For some determinands there are no UKAS/MCERTS Accredited Laboratories, in this instance a laboratory with a known track record will be utilised.
6. When requested, the individual sub sample scheduled will be screened in house for the presence of large asbestos containing material fragments/pieces. If no asbestos containing material is found this will be reported as ‘no asbestos containing material detected’. If asbestos containing material is detected it will be removed and analysed by our documented in house method TM048 based on HSG 248 (2005), which is accredited to ISO17025. If asbestos containing material is present no further analysis will be undertaken. At no point is the fibre content of the soil sample determined.
7. If no separate volatile sample is supplied by the client, the integrity of the data may be compromised if the laboratory is required to create a sub-sample from the bulk sample – similarly, if a headspace or sediment is present in the volatile sample. This will be flagged up as an invalid VOC on the test schedule or recorded on the log sheet.
8. If appropriate preserved bottles are not received preservation will take place on receipt. However, the integrity of the data may be compromised.
9. NDP – No determination possible due to insufficient/unsuitable sample.
10. Metals in water are performed on a filtered sample, and therefore represent dissolved metals – total metals must be requested separately.
11. A table containing the date of analysis for each parameter is not routinely included with the report, but is available upon request.
12. **Surrogate recoveries** – Most of our organic methods include surrogates, the recovery of which is monitored and reported.
    For EPH, MO, PAH, GRO and VOCs on soils the result is not surrogate corrected, but a percentage recovery is quoted.
13. **Product analyses** – Organic analyses on products can only be semi-quantitative due to the matrix effects and high dilution factors employed.
14. Phenols monohydric by HPLC include phenol, cresols (2-Methylphenol, 3-Methylphenol and 4-Methylphenol) and Xylenols (2,3 Dimethylphenol, 2,4 Dimethylphenol, 2,5 Dimethylphenol, 2,6 Dimethylphenol, 3,4 Dimethyphenol, 3,5 Dimethylphenol).
15. Total of 5 speciated phenols by HPLC includes Phenol, 2,3,5-Trimethyl Phenol, 2-Isopropylphenol, Cresols and Xylenols (as detailed in 14).
16. Stones/debris are not routinely removed. We always endeavour to take a representative sub sample from the received sample.
17. Our MCERTS accreditation for PAHs by GCMS applies to all product types apart from Kerosene, where naphthalene only is not accredited.
18. In certain circumstances the method detection limit may be elevated due to the sample being outside the calibration range. Other factors that may contribute to this include possible interferences. In both cases the sample would be diluted which would cause the method detection limit to be raised.
19. Mercury results quoted on soils will not include volatile mercury as the analysis is performed on a dried and crushed sample.
20. For the BSEN 12457-3 two batch process to allow the cumulative release to be calculated, the volume of the leachate produced is measured and filtered for all tests. We therefore cannot carry out any unfiltered analysis. The tests affected include volatiles GCFID/GCMS and all subcontracted analysis.
21. For all leachate preparations (NRA, DIN, TCLP, BSEN 12457-1, 2, 3) volatile loss may occur, as we do not employ zero headspace extraction.
22. We are accredited to MCERTS for sand, clay and loam/topsoil, or any of these materials – whether these are derived from naturally occurring soil profiles, or from fill/made ground, as long as these materials constitute the major part of the sample. Other coarse granular material such as concrete, gravel and brick are not accredited if they comprise the major part of the sample.
23. Analysis and identification of specific compounds using GCFID is by retention time only, and we routinely calibrate and quantify for benzene, toluene, ethylbenzenes and xylenes (BTEX). For total volatiles in the C4 – C10 range, the total area of the chromatogram is integrated and expressed as ug/kg or ug/l. Although this analysis is commonly used for the quantification of gasoline range organics (GRO), the system will also detect other compounds such as chlorinated solvents, and this may lead to a falsely high result with respect to hydrocarbons only. It is not possible to specifically identify these non-hydrocarbons, as standards are not routinely run for any other compounds, and for more definitive identification, volatiles by GCMS should be utilised.

Last updated 25 June 2009

LIQUID MATRICES EXTRACTION SUMMARY

ANALYSIS	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
PAH MS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
EPH	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
EPH CWG	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
MINERAL OIL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC FID
PCB 7 CONGENERS	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GC MS
PCB TOTAL	HEXANE	STIRRED EXTRACTION (STIR-BAR)	GS MS
SVOC	DCM	LIQUID/LIQUID SHAKEN SVOC	GC MS
FREE SULPHUR	DCM	SOLID PHASE EXTRACTION	HPLC
PEST OCP/OPP	DCM/EA	SOLID PHASE EXTRACTION	GC MS
TRIAZINE HERBS	DCM/EA	SOLID PHASE EXTRACTION	GC MS
PHENOLS MS	DCM	SOLID PHASE EXTRACTION	GC MS
TPH by INFRA RED (IR)	TCE	LIQUID/LIQUID EXTRACTION	HPLC
MINERAL OIL by IR	TCE	LIQUID/LIQUID EXTRACTION	HPLC
SAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
UNSAPONIFIABLE	TCE	LIQUID/LIQUID EXTRACTION	HPLC
GLYCOLS	DCM	LIQUID/LIQUID EXTRACTION	EZ FLASH

SOLID MATRICES EXTRACTION SUMMARY

ANALYSIS	D/C OR WET	EXTRACTION SOLVENT	EXTRACTION METHOD	ANALYSIS
Solvent Extractable Matter	D&C	DCM	SOXTHERM	GRAVIMETRIC
Cyclohexane Ext. Matter	D&C	CYCLOHEXANE	SOXTHERM	GRAVIMETRIC
Thin Layer Chromatography	D&C	DCM	SOXTHERM	IATROSCAN
Elemental Sulphur	D&C	DCM	SOXTHERM	HPLC
Phenols by GCMS	WET	DCM	SOXTHERM	GC-MS
Herbicides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
Pesticides	D&C	HEXANE:ACETONE	SOXTHERM	GC-MS
EPH (DRO)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Min oil)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH (Cleaned up)	D&C	HEXANE:ACETONE	END OVER END	GC-FID
EPH CWG by GC	D&C	HEXANE:ACETONE	END OVER END	GC-FID
PCB tot / PCB con	D&C	HEXANE:ACETONE	END OVER END	GC-MS
Polyaromatic Hydrocarbons (MS)	WET	HEXANE:ACETONE	Microwave TM218.	GC-MS
C8-C40 (C6-C40)EZ Flash	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Polyaromatic Hydrocarbons Rapid GC	WET	HEXANE:ACETONE	SHAKER	GC-EZ
Semi Volatile Organic Compounds	WET	DCM:ACETONE	SONICATE	GC-MS

Identification of Asbestos in Bulk Materials

The results for asbestos identification for soil samples are obtained from possible Asbestos Containing Material, removed during the 'Screening of soils for Asbestos Containing Materials', which have been examined to determine the presence of asbestos fibres using Alcontrol Laboratories (Hawarden) in-house method of transmitted/polarised light microscopy and central stop dispersion staining, based on HSG 248 (2005).

Visual Estimation Of Fibre Content.

Estimation of fibre content is not permitted as part of our UKAS accredited test other than: -

Trace – Where only one or two asbestos fibres were identified.

Further guidance on typical asbestos fibre content of manufactured products can be found in MDHS 100.

The identification of asbestos containing materials falls within our schedule of tests for which we hold UKAS accreditation, however opinions, interpretations and all other information contained in the report are outside the scope of UKAS accreditation.

Asbestos Type	Common Name
Chrysotile	White Asbestos
Amosite	Brown Asbestos
Crocidolite	Blue Asbestos
Fibrous Actinolite	-
Fibrous Anthophyllite	-
Fibrous Tremolite	-

Last updated 25 June 2009

APPENDIX C

Noise Emission Report

Document Amendement Record

Client: RILTA Environmental Ltd

Project: Greenogue Noise Monitoring

Title: Noise Monitoring Report – December 2009

Project Number:	3084 (1250)		**Document Ref:** AER 2009		
Revision	**Purpose / Description**	**Originated**	**Checked**	**Authorised**	**Date**
1	Noise Monitoring – December 2009	DC 15/12/09	BS 15/12/09	DG 15/12/09	15/12/09
		TOBIN			

Table of Contents

List of Tables

1 INTRODUCTION

This report deals with the noise monitoring requirement conditions of RILTA Environmental Ltd. Hazardous Waste Facility at Greenogue Business Park, Catchpole, Co. Dublin, Waste Licence No. 192-02.

2 NOISE MONITORING SURVEY

The noise survey was carried out within the site boundary of the waste facility at the locations agreed with the EPA (see Drawing No. 1250/01/1002). Weather conditions during monitoring were dry and calm with no 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 'Environmental Noise Survey Guidance Document, 2003;
- 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.
- Calibration Type: Larson Davis Precision Acoustic Calibrator Model CA200.

2.2 Measurement Procedure

Daytime and night time noise monitoring was carried out on 14th December 2009. Noise monitoring was undertaken for 30 minute intervals at four agreed EPA locations. All the environmental noise analysers had data logging facilities 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.

All acoustic instrumentation was calibrated before and after the survey period and no drift of calibration was observed (calibration level 114dB at 1000Hz).

2.3 Results of Noise Survey

The noise monitoring locations are described in Table 1 and illustrated on Drawing No.

1250/01/1002. The results of the noise survey are given in Table 2. The 1/3 Octave frequency analysis data is given in graphical format in Appendix 1.

Table 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 southwestern boundary of the site, adjacent to the site car park and to the access road to RILTA within the Greenogue Business Park. Daytime noise sources included activities on site, site traffic, activity in adjacent sites to the east and south of the facility, low flying Aircraft from nearby Baldonnell Airport and traffic on the internal Business Park roads. Night time noise sources included distant traffic, traffic on the Business Park roads, aircraft from nearby Baldonnell Airport. During nighttime monitoring periods noise emissions from RILTA were not audible.

Location N2

N2 is located in the northwestern corner of the site, behind the racked storage building. During daytime monitoring periods noise emissions from RILTA were audible. Site improvement works at an adjacent site to the north of the RILTA facility (John Paul Construction) was the dominant daytime noise source, with heavy goods vehicles (HGVs) within the RILTA site, occasional low flying Aircraft from nearby Baldonnell Airport and traffic on the internal Business Park roads also contributing to recorded daytime noise levels. During night time monitoring periods noise emissions from RILTA were not audible and the dominant noise sources included the adjacent stream, low flying aircraft from nearby Baldonnell Airport, distant traffic on the N7 and traffic on the internal Business Park roads.

Location N3

N3 is located at the northeastern site boundary, adjacent to the Tank Farm. Noise emissions from RILTA were audible at N3 during the daytime noise monitoring period. Dominant daytime noise sources at N3 included activity within the site, low flying Aircraft from nearby Baldonnell Airport and from site works in the adjacent premises to the north of the facility (John Paul Construction). During nighttime measurement periods the dominant noise source was low flying aircraft from nearby Baldonnell Airport, distant traffic on the N7 and traffic on the internal Business Park roads. Other noise sources included the adjacent Stream and occasional bird song in the distance.

Location N4

Noise monitoring location N4 is located in the southeastern corner of the site. During the daytime noise monitoring period activities from inside the facility were not audible, however site traffic was audible. The dominant noise source at this location was passing traffic on the internal Business Park roads and low flying aircraft from nearby Baldonnell Airport. During the nighttime monitoring period low flying aircraft and distant traffic on the N7 were the dominant source of noise emissions. Occasional passing traffic on the internal business park roads also contributed to noise levels.

Table 2 Noise Monitoring Results – dB(A) and 30 minute intervals

Location	Date	Time	Leq	L_{10}	L_{90}	Comments
DAYTIME MONITORING						
N1	14th Dec 09	13:53	57.0	60.7	48.8	Vehicular traffic entering/exiting the Rilta site, low flying aircraft from nearby Baldonnell Airport, passing traffic on the internal Business Park roads and site works in adjoining premises to the south and southeast of N1.
N2	14th Dec 09	12:02	59.4	62.8	50.4	Site works and road sweeper fan noise at an adjacent site to the north of the facility was the dominant noise source. Site activities at Rilta, low flying aircraft and the adjacent flowing stream also contributed to recorded noise levels.
N3	14th Dec 09	12:43	56.8	59.5	54.2	Site activities, low flying aircraft from nearby Baldonnell Airport, passing traffic on internal Business Park roads and site works in adjacent premises to the north were the dominant noise sources.
N4	14th Dec 09	13:17	56.3	59.1	50	Distant Traffic on the N7, passing traffic on the internal Business Park roads, low flying aircraft from nearby Baldonnell Airport and traffic exiting/entering the Rilta site were the dominant noise sources.
NIGHT TIME MONITORING						
N1	14th Dec 09	01:55	46.0	39.1	35.2	Traffic on the internal Business Park roads, low flying aircraft from nearby Baldonnell Airport and works taking place in an adjacent facility to the southeast of N1 were the dominant noise sources.
*N2	14th Dec 09	00:09	45.7	46.6	44.2	The Stream adjacent to N2, low flying aircraft from nearby Baldonnell Airport, distant traffic on the N7 and traffic on the internal Business Park roads were the dominant night time noise sources at N2.
*N3	14th Dec 09	00:45	46.0	49.9	41.1	Low flying aircraft from nearby Baldonnell Airport was the dominant noise source. Distant traffic on the N7, traffic movements on the internal Business Park roads and distant birdcalls all contributed to recorded noise level at N3.

N4	14th Dec 09	01:21	43.7	48	36.1	Low flying aircraft from nearby Baldonnell Airport was the dominant noise source. Passing traffic on the internal Business Park roads and distant traffic on the N7 also contributed to night noise levels at N4.

3 CONCLUSION

The noise emission limits given in Waste Licence 192-02 are 55 dB(A) for day time 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 noise emissions from RILTA Environmental Ltd. are given in Table 2.

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 Business Park. Noise emissions from the RILTA facility were audible only during daytime monitoring and not audible during the nighttime monitoring. Note that the EPA agreed noise monitoring locations are all on site and do not reflect emissions at noise sensitive locations.

The A-weighted equivalent continuous sound pressure level (LAeq, 30 min) recorded at the RILTA facility was not recorded as being less than 55 dB(A) at any of the noise monitoring locations during the daytime monitoring event. Where the measured LAeq,30 min exceeded 55 dB(A), this was due to the addition of extraneous noise sources such as low flying aircraft from nearby Baldonnell Airport, passing traffic on the internal roads of the Business Park, distant traffic on the N7 and activities in adjacent sites.

No noise emissions due to the RILTA facility were audible during the nighttime monitoring period. During the nighttime monitoring period the A-weighted equivalent continuous sound pressure level (LAeq, 30 min) was more than 45 dB(A) (night time) at 3 no. locations (N1,N2 & N3) due to extraneous noise sources such as traffic on the Business Park road network, the adjacent flowing stream or low flying aaircraft from nearby Baldonnell Airport.

There were no impulsive noise emissions audible at any of the monitoring locations during the daytime or nighttime monitoring period. With regard to tonal emissions, Figures 1-4 indicates that tonal components were present at 2.no night monitoring locations (N2 & N3), however no tonal emissions were recorded at any location during the daytime monitoring event.

There was a pure tone at 25Hz measured at monitoring location N2 (Night Monitoring). This tone at this frequency was inaudible at all locations during the survey, the 5dB penalty was not added. It should be noted that activity in adjacent sites to the north of the facility, a nearby stream and low flying aircraft was the dominant noise source at this location and not the RILTA facility. The tone at N2 (25Hz) was not observed at any other location during either the night or day monitoring event and as such is unlikely to have originated due to RILTA activities.

There was a tonal component at 200Hz measured at monitoring location N3 (Night

Monitoring). This tone at this frequency was inaudible at all locations during the survey, the 5dB penalty has not been added. It should be noted that activity in adjacent sites to the north of the facility, a nearby stream and low flying aircraft was the dominant noise source at this location and not the RILTA facility. The tone at N3 (200Hz) was not observed at any other location during either the night or day monitoring event and as such is unlikely to have originated due to RILTA activities so no penalty has been applied.

APPENDIX 1 – FREQUENCY ANALYSIS

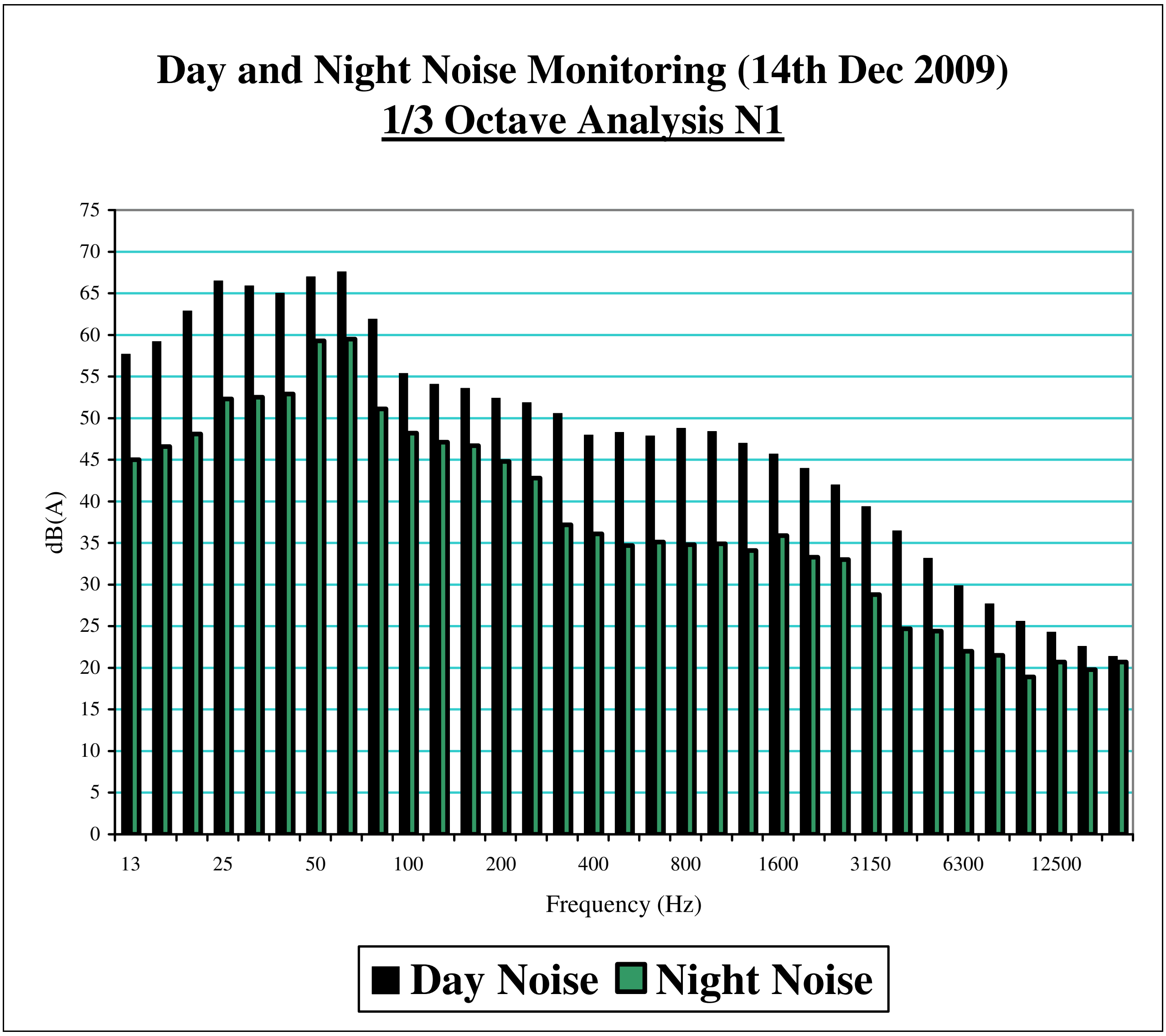

Figure 1 - N1 Daytime and Night Noise Monitoring

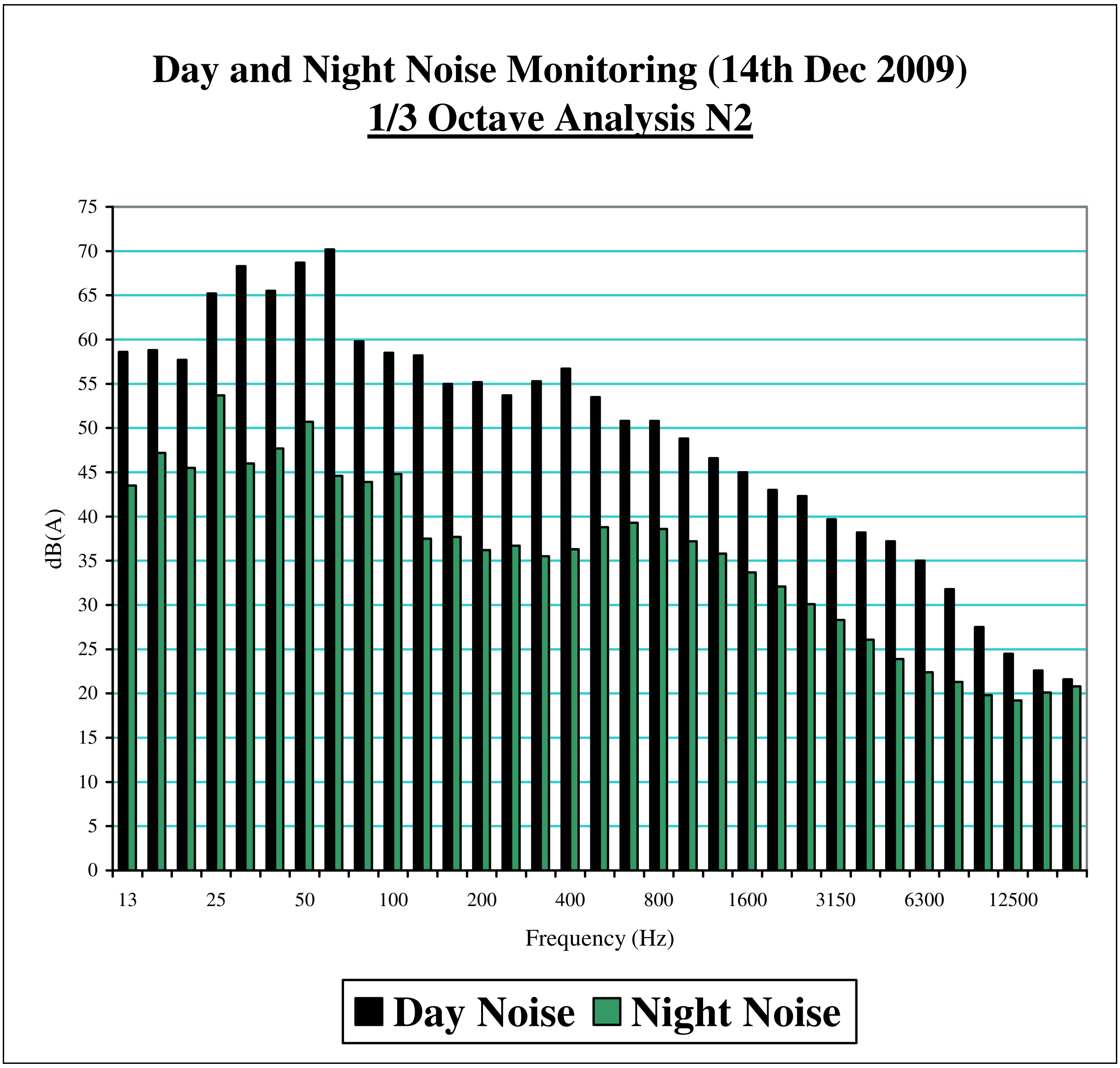

Figure 2 - N2 Day and Night Noise Monitoring

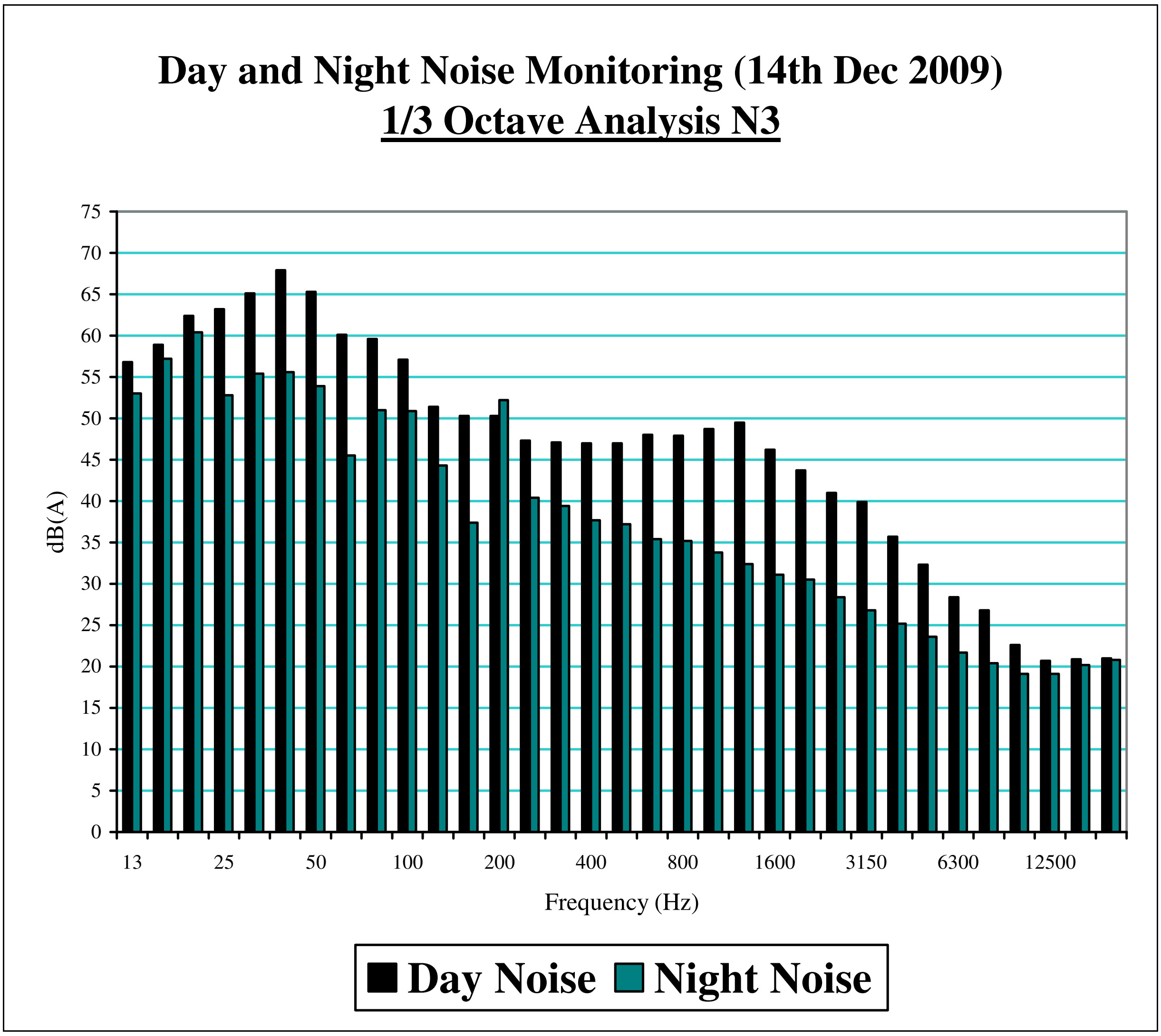

Figure 3 - N3 Day and Night Noise Monitoring

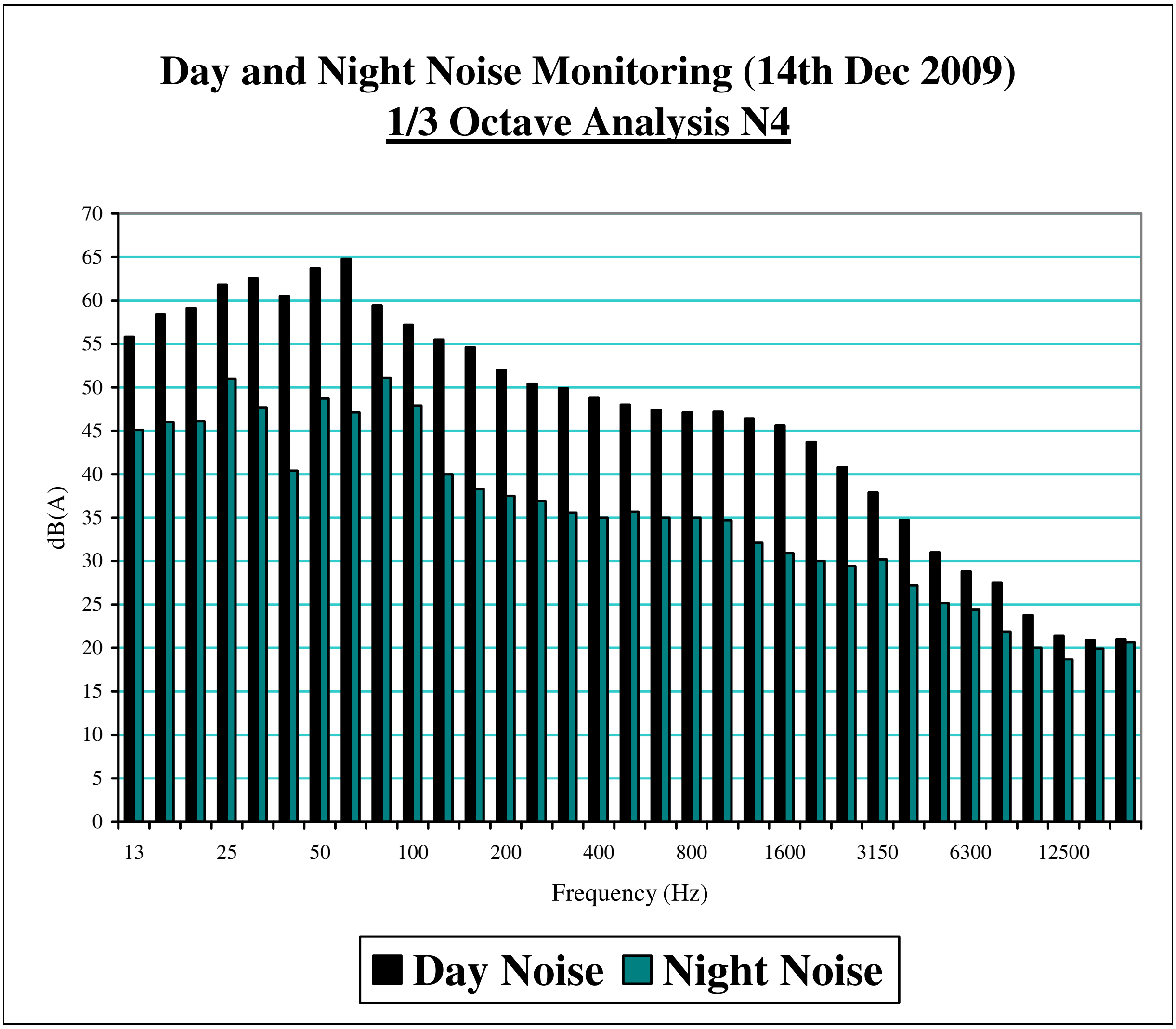

Figure 4 - N4 Day and Night Monitoring

APPENDIX D

EMP – ER003

RILTA ENVIRONMENTAL Ltd.

ENVIRONMENTAL MANAGEMENT SYSTEM

ENVIRONMENTAL MANAGEMENT PLAN

ER-003

In accordance with
ISO 14001

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND TARGETS

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
1	Increase environmental awareness among RILTA staff.	Develop and issue quarterly e-mail environmental bulletin.	June 09	N
2	Promote best practice in the processing of waste generated on site.	Engage with waste contractors as to the possibility of getting fully segregated waste of all types collected on site.	Apr 09	Y
3	Reduce fugitive emissions.	Annual monitoring of fugitive emissions. Re-assess the air extraction unit on the spray booth to decrease air flow rate.	Ongoing June 09	Y Y

Issue No.	005	*Compiled by: Name/Position*	Colm Hussey Facility & Environmental Manager
Date:	March 2009	*Reviewed by: Name/Position*	Nick Beale Managing Director

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
4	Improve site housekeeping.	Insist that only fully and correctly labeled drums/IBCs are accepted on site.	Ongoing	Y
		Install segregated bays for different soils in Bay 2	May 09	Y
5	Promote best practice for mixing incompatible wastes.	Install a further chemstore for difficult to segregate wastes such as Class 4.2	March 09	Y
		Review segregation in Bay 7	September 09	Y

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
6	Reduce use of hazardous raw materials used on site.	Insist on all paint suppliers to produce annual VOC reports Implement the 'treat waste with waste' best practice method on an ongoing basis	Dec 2009 Ongoing	Y Y
7	Optimize the quality of effluent discharged to sewer	Investigate the possibility of using boron electrochemical charged ions as a means of reducing COD Offer the customer free sample analysis for waste in order to get as much waste pre-tested as possible.	August 2009 May 2009	N Y

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
8	To be a good and considerate neighbour.	Complete noise monitoring.	Ongoing	Y
		Review site landscaping project to enhance the visual aspect of the site.	Sept 2009	N
		Monitor adjoining river on a yearly basis.	Ongoing	Y
		Examine and implement findings of the VOC/Odour survey.	August 2009	Ongoing
		Maintain a ‘complaints register’ and review annually.	Ongoing	Y

RILTA ENVIRONMENTAL Ltd.

ENVIRONMENTAL MANAGEMENT SYSTEM

ENVIRONMENTAL MANAGEMENT PLAN

ER-003

In accordance with
ISO 14001

ENVIRONMENTAL MANAGEMENT PROGRAMME FOR THE ACHIEVEMENT OF OBJECTIVES AND TARGETS

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
1	Increase environmental awareness among RILTA staff.	Develop and issue quarterly e-mail environmental bulletin.	June 10	
2	Promote best practice in the processing of waste generated on site.	Assess implications of food regulations and formulate waste minimization plan accordingly.	Sept 10	
3	Reduce fugitive emissions.	Annual monitoring of fugitive emissions.	Ongoing	

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
4	Improve site housekeeping.	Insist that only fully and correctly labeled drums/IBCs are accepted on site. Investigate the possibility of building a wall at the north end of the site to control litter and other contaminants from reaching the river.	Ongoing	
5	Promote best practice for mixing incompatible wastes.	Complete re-assessment of storage in Bays 4 and 7 and implement findings	June 2010	

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
6	Reduce use of hazardous raw materials used on site.	Implement the 'treat waste with waste' best practice method on an ongoing basis Reduce volume of Xylene by 5%	Ongoing Dec 2010	
7	Optimize the quality of effluent discharged to sewer	Offer the customer free sample analysis for waste in order to get as much waste pre-tested as possible. Investigate the JLJ reverse osmosis system as a means of secondary/tertiary form of treatment	Ongoing Oct 2010	

EMP Ref.	***Objective***	***Environmental Management Programme for the implementation of objectives.***	***Completion Date***	***Completed (Y/N)***
8	To be a good and considerate neighbour.	Complete noise monitoring.	Ongoing	
		Review site landscaping project to enhance the visual aspect of the site.	Sept 2010	
		Monitor adjoining river on a yearly basis.	Ongoing	
		Maintain a ‘complaints register’ and review annually.	Ongoing	
		Liaise with industrial neighbours on a quarterly basis	Ongoing	
		Implement ‘closed door’ policy system	Ongoing	
		Investigate the effectiveness of general site extraction fans	August 2010	
9	Fire Safety	Complete building fire safety review and implement findings.	September 2010	

APPENDIX E

EMS Manual

RILTA Environmental Ltd.			
EMS PROCEDURE MANUAL			
TITLE	Contaminated soil management	**REF**	
ISSUED BY	Colin Lennon	**APPROVED BY**	
DATE	06/08/2009	**PAGE**	1 of 2

This document is issued and controlled by the Environmental Manager. This is a controlled document subject to change at any time, and therefore should not be copied. Only signed, authorised copies may be used as working documents.

Revision	Description	By	Approved	Date
001		C. Lennon		06/08/2009

1.0 Purpose

To document the waste acceptance procedures for the acceptance of material in Bay 2 – contaminated soil storage facility.

2.0 Scope

The management of material in Bay 2

3.0 Responsibility

Soil Contracts Manager & Environmental Manager

4.0 Waste Acceptance Procedure

Contaminated Soil:

For smaller volumes of soil typically the volumes encountered as a result of domestic oil spills (20 – 60 tonnes) the following acceptance policy is adhered to:

- Prior to soil arriving on site customers provide us with test results for the material to be delivered.
- In most cases the analysis carried out is as per 2003/33/EC Establishing acceptance criteria for waste at landfill.
- On occasion we make an exception for small volumes of material which may not have analysis but the nature of the contamination has been clearly identified and the potential risks are understood.
- Material which arrives at our facility without analysis will be stockpiled, isolated and tested as per the procedure for managing material in Bay 2.
- In most cases the analysis undertaken by the client does not facilitate the complete use of the EPA hazardous waste tool as total pollutant content has not been determined for metals however the concentration of key contaminants such as DRO or PAHs are examined to determine if they exceed the hazardous waste thresholds

- Using the EPA hazardous waste tool DROs have been identified as category 3 carcinogens. A material will be classified as hazardous if the total concentration of category 3 carcinogens is greater than 10,000 mg/kg.
- Using the EPA hazardous waste tool PAHs have been identified as category 2 carcinogens. A material will be classified as hazardous if the total concentration of category 2 carcinogens is greater than 1,000 mg/kg.
- If the analysis results exceed the hazardous thresholds the material will be directed to the export stockpile
- If the results do not exceed the hazardous thresholds the material will be directed to the active stockpile

Material is accepted into the transfer station as 170503* this is taking a precautionary approach on the categorisation of material due to the fact that the full characterisation of the material is not possible with the analysis submitted by the client. The correct categorisation of the material is determined by adhering to the "procedure for management of contaminated soils within bay 2"

In the case of larger sites a site visit will be carried out prior to the acceptance of material. The same procedure as outlined above is adhered to for the acceptance of soil from larger sites.

Once sufficient volumes have been built up in the stockpiles the procedure will be undertaken for the testing and categorisation of stockpiled soils.

Typical Waste Acceptance Criteria Testing.

- Diesel Range Organics (DRO);
- Mineral oil;
- Benzene, Toluene, Ethylbenzene and Xylene (BTEX) compounds;
- Speciated 17 PAHs;
- Metals (As, Ba, Cd, Cr, Cu, Hg, Mo, Ni, Sb, Pb, Se, Zn); (both leachate and total pollutant conc.)
- Polychlorinated biphenyls (PCBs);
- Total organic carbon (TOC)
- Phenol Index;
- Dissolved Organic Carbon (DOC); and
- Total Dissolved Solids (TDS).
- Chloride, Fluoride & Sulphate

RILTA Environmental Ltd.			
EMS PROCEDURE MANUAL			
TITLE	Contaminated soil management	**REF**	
ISSUED BY	Colin Lennon	**APPROVED BY**	
DATE	06/08/2009	**PAGE**	1 of 3

This document is issued and controlled by the Environmental Manager. This is a controlled document subject to change at any time, and therefore should not be copied. Only signed, authorised copies may be used as working documents.

Revision	Description	By	Approved	Date
001		C. Lennon		06/08/2009

1.0 Purpose

To document the procedures for the stockpiling, testing and disposal of material in Bay 2 – contaminated soil storage facility.

2.0 Scope

The management of material in Bay 2

3.0 Responsibility

Soil Contracts Manager & Environmental Manager

4.0 Pr ocedure

Contaminated Soil:

- Bay 2 will be divided into separate areas using concrete “tombstones”
- 2 active stockpiling areas will be designated within bay 2.
  - Active area 1 will contain material for which we have received analysis results
  - Active area 2 will contain material for which we have not received analysis results
- When the stockpiles contain a quantity of between 500 – 1000 tonnes they will be quarantined and new active stockpile areas designated.
- Environmental consultants have been contracted to collect samples, test the material and screen the results against the waste acceptance criteria for landfill in Ireland and the EPA hazardous waste classification tool.
- Once samples have been taken from a stockpile, the stockpile will be isolated, labelled and no further material will be added to the pile.
- Subject to the test results, the report from the environmental consultants and the approval of the landfill operator if the material is classified as non-hazardous the material will be sent to KTK non-hazardous landfill EPA licence no. W081-3 for disposal.

- If the material is classified as hazardous the material will be exported under TFS for treatment and disposal at appropriately licenced facilities in Germany or the Netherlands.
- At any time there will be 4 soil stockpiles in bay 2, two active stockpiles, one quarantined stockpile pending test results, classification and disposal and one pending export.
- Each stockpile will be clearly labelled and placed in areas segregated by concrete “tombstones”

Coal Tar containing materials.

- Coal-tar containing materials will be screened, isolating the chunks of coal-tar from the rest of the material.
- The screened material will be isolated and tested in the same manner as described for soils above.
- Subject to the test results, the report from the environmental consultants and the approval of the landfill operator if the material is classified as non-hazardous the material will be sent to KTK non-hazardous landfill EPA licence no. W081-3 for disposal.
- The isolated chunks of coal tar will be placed in a clearly labelled stockpile and disposed of at ATM in the Netherlands under TFS.

All stockpiled material in bay 2 will be tested for the contaminants listed below.
In addition to the parameters defined in the "council decision of 19 December 2002 establishing criteria and procedures for the acceptance of waste at landfills pursuant to Article 16 of and Annex II to Directive 1999/31/EC" additional testing is also carried out to allow for use of the hazardous waste classification tool.

- Diesel Range Organics (DRO);
- Mineral oil;
- Benzene, Toluene, Ethylbenzene and Xylene (BTEX) compounds;
- Speciated 17 PAHs;
- Metals (As, Ba, Cd, Cr, Cu, Hg, Mo, Ni, Sb, Pb, Se, Zn); (both leachate and total pollutant conc.)
- Polychlorinated biphenyls (PCBs);
- Total organic carbon (TOC)
- Phenol Index;
- Dissolved Organic Carbon (DOC); and
- Total Dissolved Solids (TDS).
- Chloride, Fluoride & Sulphate

RILTA Environmental Ltd.			
EMS PROCEDURE MANUAL			
TITLE	PROCESSED OIL DELIVERY PROCEDURE	**REF**	
ISSUED BY		**APPROVED BY**	
DATE	JULY 2009	**PAGE**	1 of 3

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Revision	Description	By	Approved	Date

1.0 Purpose

To ensure that all processed oil delivered for use on external sites is suitable and has associated full traceable paperwork; and to ensure that the oil is used in an approved manner at an approved location.

2.0 Scope

This procedure details the loading, completion of all associated paperwork and delivery requirements of consignments of processed oil.

3.0 Responsibility

The Oil Treatment Plant Manager is responsible for ensuring that this procedure is carried out. Relevant site staff are responsible for following this procedure.

4.0 Procedure

4.1 All processed oil loads must be notified at least 48 hours in advance to allow for transport and all associated paperwork to be prepared. Only fully clean tankers from approved companies will be allowed to transport processed waste oil.

4.2 A finished processed oil product tank with the relevant test cert, from which to take oil, will be chosen and connected up to the loading hose-pipe.

4.3 A load card will be inserted into the calibrated oil flow-meter and loading shall then proceed. The meter measures volume in litres.

4.3 Loading will be supervised at all times by a Rilta employee until the required amount has been dispensed. The completed flow-meter card is then removed from the printing slot. Copies of this triplicate document will go to the following stakeholders:

- Processed oil production department
- Processed oil carrier
- Rilta invoicing/records

4.4 The full load will then be weighed and all relevant paperwork be given to the carrier. This will include the following:

- Approved consignment note
- Load test cert
- Triplicate copy of completed oil flow meter card
- Delivery docket

4.5 All notified processed oil delivery jobs will be entered onto Rilta Environmental’s data management system, with all the relevant information. This information will all appear on the ‘daily diary’ so all stakeholders within the company know what processed oil loads are due to be delivered on any given day.

4.6 The carrier will then proceed to the delivery site where on-site unloading procedures will apply. The driver will connect his delivery hose to the processed waste oil storage tank and discharge the load. The driver will get the delivery docket completed and signed by the relevant site supervisor/manager. The delivery docket will include instruction that the processed waste oil must only be discharged to the appropriate storage tank as per the contract agreement between Rilta and the approved user.

4.7 The completed delivery dockets and associated paperwork will be returned to Rilta Environmental so the invoicing process may begin. Records of all paperwork will be kept by Rilta Environmental.

RILTA Environmental Ltd.			
EMS PROCEDURE MANUAL			
TITLE	On-site filling of Isotankers with re-processed oil.	**REF**	
ISSUED BY	Colm Hussey	**APPROVED BY**	
DATE	September 2009	**PAGE**	1 of

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Revision	Description	By	Approved	Date

1.0 Purpose

To ensure the safe loading of oil product into isotankers and avoid spills.

2.0 Scope

This procedure is restricted to the movement of oil from the re-processed oil tanks to isotankers (or other product receptors).

3.0 Responsibility

Declan Geoghegan is responsible for ensuring this procedure is adhered to.

4.0 Procedure

4.1 Oil deliveries shall be notified as per the ‘Processed Oil Delivery Procedure’

4.2 When an isotanker arrives on site, it is weighed and directed to the oil delivery bay outside Bay 7. Declan Geoghegan or his designated person will be notified of the arrival.

4.3 The isotanker will be guided into the marked parking spot for re-processed oil vehicles. When the vehicle reaches the correct position he shall turn off the engine and engage the hand-brake.

4.4 Rilta staff will then proceed to ensure that the filling hose is plumb with the tank opening by ascending the oil delivery platform and rotating the oil delivery hose as required.

4.5 The tanker hatch may now be opened from the delivery platform.

4.6 The predetermined oil tank shall be re-checked at this point as per the ‘Processed Oil Delivery Procedure’.

4.7 When all is in order the final discharge may be opened and begin filling the tanker.

4.8 One operative shall continue to monitoring the fill from the oil delivery platform and one operative shall check the flow meter during the fill.

4.9 When the tanker is full, the fill valve shall be shut and moved to the back of the tanker s as not to impede the tanker moving.

4.10 The tanker hatch may then be shut.

4.11 When everything is in order, the supervising operative should alight the delivery platform before the go ahead is given to the tanker driver to start the tanker engine.

4.12 Re-weighing and paperwork shall be completed as per the ‘Processed Oil Delivery Procedure’.

RILTA Environmental Ltd.			
EMS PROCEDURE MANUAL			
TITLE	CONTAMINATED SOIL ACCEPTANCE & STORAGE	**REF**	EOP 007j
ISSUED BY		**APPROVED BY**	
DATE	NOVEMBER 2004	**PAGE**	1 of 2

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Revision	Description	By	Approved	Date
Oct 05	Update Cleaning	CH	NB	18 Oct 05
Dec 06	Company Name Change	CH	NB	15/12/2006
Apr 09	Segregation of Soil Bay	CH	EI	09/04/2009

1.0 Purpose

To ensure the correct acceptance, handling and storage of contaminated soil delivered to site.

2.0 Scope

This procedure details the acceptance, handling and storage of contaminated soil delivered to site. Contaminated soil is not treated on site.

3.0 Responsibility

The Soil Contracts Manager & Environmental Manager is responsible for ensuring that this procedure is carried out. Relevant site staff are responsible for following this procedure.

4.0 Procedure

4.1 Before loads of contaminated soil may be detailed for delivery, the customer must provide test results as to the level of contamination. In most cases analysis is carried out as per Council Decision 2003/33/EC establishing criteria and procedures for the acceptance of waste at landfill.

4.2 The results shall be interpreted and the concentration of key contaminants such as DRO’s and PAH’s are examined to determine if they exceed hazardous waste thresholds.

4.3 If the analysis results exceed the hazardous thresholds, the load will be directed to the ‘export’ stockpile, other wise it will be directed to the ‘active’ stockpile.

4.4 In some cases where low level hydrocarbon contamination has been determined e.g. a fuel spill on a Greenfield site, isolated small loads of soil will be accepted without analysis and directed to the active stockpile.

4.5 Contaminated soil shall be notified to the relevant persons at Rilta at least 24 hours before delivery and shall be accompanied by appropriate documentation.

4.6 Soil arrives on site in either 1 tonne bags or in bulk in suitable managed ‘tipper’ trucks by permitted persons. All waste is inspected and weighed before being directed to the contaminated soils bay, Bay 2. All waste must be accompanied by suitable documentation, including, as a minimum, a C1 notification form or equivalent tracking form.

4.7 All loads are stockpiled to allow for large numbers of soil loads to be delivered on a given day. The contaminated soils bay will also be tidied at the end of every day and street cleaners employed where necessary to clean the immediate access roads.

4.8 The persons charged with tidying the soils area will ensure that the storage of contaminated soils is such that leachate from the soil is not allowed drain out of the doorway of the building.

4.5 The management and segregation of soil on-site is detailed in EMS Procedure EOP007k

RILTA Environmental Ltd.			
EMS PROCEDURE MANUAL			
TITLE	WASTE OIL ACCEPTANCE	**REF**	
ISSUED BY		**APPROVED BY**	
DATE	JULY 2009	**PAGE**	1 of 3

This document is issued and controlled by the Environmental Manager. This is a controlled document subject to change at any time, and therefore should not be copied. Only signed, authorised copies may be used as working documents.

Revision	Description	By	Approved	Date

1.0 Purpose

To ensure that all waste oils accepted for treatment are suitable for use as a re-processed fuel.

2.0 Scope

This procedure details the notification, pre-acceptance, sampling and analysis prior to waste entering the waste oil treatment batch process.

3.0 Responsibility

The Oil Treatment Plant Manager is responsible for ensuring that this procedure is carried out. Relevant site staff are responsible for following this procedure.

4.0 Procedure

4.1 All waste oil loads must be notified at least 24 hours in advance (emergency spills etc excepted) with following information:

- Source of waste
- Description of waste
- EWC code for the waste (As detailed in Attachments I and II)
- Volume of Waste
- Carrier of waste
- Analysis of waste if applicable

4.2 Larger loads or price-dependent loads may require a pre-acceptance sample to determine the quality or otherwise of the sample

4.3 The following waste types are not acceptable for treatment:

- Petrol
- Solvent contaminated oil
- Oil with food grease contamination
- Plant and edible oils
- Oil with ammonia contamination

4.3 Transformer oils or oils with suspected PCB (Polychlorinated Biphenyls) contamination may not be accepted prior to sampling. While PCB certs will be accepted, all loads with these certs will also be tested for PCB's.

4.4 Transformer oils which show the presence of PCB's will be quarantined and an alternative form of disposal shall be agreed.

4.5 All notified waste oil jobs will be entered onto the Rilta Environmental's data management system, with all the information detailed above. This information will all appear on the 'daily diary' so all stakeholders within the company know what waste oil loads are due in on any given day.

4.6 When a waste oil load arrives on site, it will be weighed in and directed to the waste oil unloading area. The oil division/laboratory operatives will have all the relevant load detail on Data Management System and will sample the load for comparison.

4.7 For regular waste oil loads (eg garage based hydraulic oils etc) only the following parameters will be analysed:

- Water content (%)
- Flash point (°C)
- Chlorine
- Heavy Metals

4.8 Transformer Oil loads, or loads of halogenated oil will require an additional PCB/Total Halogen test confirm suitability for treatment.

4.9 Mixed oil loads, such as those detailed in Attachment II may be directed to the aqueous treatment area to unload the 'water' element of the load before proceeding to unload the oil element as per normal.

4.10 All 25m^3 'batches' of oil collected at the delivery area shall be bench tested to determine the most suitable course of treatment.

APPENDIX F

Boiler Test Certificate

```
Renwick Engineering
[illegible]
signature:

DATE:  [illegible]
TIME:  [illegible]

LIGHT OIL
[illegible]     6.22
NET             167
FLUE            181
INLET      NOT FITTED
AMBIENT         14.0

O2              6.2
CO2             10.9
SMOKE

CO              3
XAIR            40.[illegible]
CO/CO2          .0000
P INDEX         0.00

CO A            OFF
O2 REF          OFF

LOSSES          14.5
EFF (G)         85.5

BATTERY         40
*************************************
```

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MARINE & INDUSTRIAL BOILER REPAIRS
BOILER INSTALLATIONS & MAINTENANCE
WELDING & FABRICATIONS
DISTRIBUTORS: IVAR BOILERS
TAYLOR VALVES, ELCO KLÖCKNER

SITE ADDRESS

Rilta

SERVICE REPORT 4292

,3,10 Order No.: **Job No.**

e
issioning
☑ **Callout**
☐ **Emergency**

g out. Removed and Cleared
Checked Pilot Flame and

Checked Pump and Spill Back Pressure all
ok. Checked Combustion. Air was very high
Pump pressure will not Adjust Pump Needs
Replacing. Reset and Tuned Combustion to
Suit low throughput

Fired Burner Several times all ok

Boiler Details	**Burner Details**
Type Galan	Type Cochran
Serial	Spec
Output	Serial
Capacity	Fuel 35 sec
	Light Oil

Working Hrs.		**€**	**c**
1. F/Time	3½		
2. O/Time			
3. D/Time			
4. T/Time			
5. Mileage			
6. Exp.			
7. Mat. Used			

COMBUSTION TEST RESULT

Gas			Oil		
Flame	Low	High	Flame	Low	High
Gas Pressure			Nozzle size		
O_2 %			O_2 %	6.2	
CO_2 %			CO_2 %	10.9	
CO ppm			CO ppm	3	
Flue Temp °C			Flue Temp °C	187	
EFF %(G)			EFF %(G)	85.5	
Gas Flow M^3/min			Oil Flow		

Qty	Details		
-			

Comment New Pump Needed

Sub-Total		
V.A.T.		
Total Charge		
EU		

Emergency Yes No

Signature of Engineer

Signature of Client

DIRECTORS: M.T. RENWICK • G.O. RENWICK

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