

Molaisín

Compost Limited

Annual Environmental Report

Name: Molaisín Compost Limited
Address: Kilmolash, Cappoquin, Co Waterford
Waste Licence: W0245-01
Reporting Period: January 1st 2016 – December 31st 2016

Signed:



Heather Loughlin
Environmental Manager

1.0 REPORTING PERIOD

This report covers the period 1st January 2016 – 31st December 2016.

2.0 WASTE ACTIVITIES CARRIED OUT AT THE FACILITY

Molaisín Compost Limited (Molaisín) commenced waste activities at the facility at Kilmolash, Cappoquin, Co Waterford in 2005. Molaisín operated under a Waterford County Council waste permit up to August 2010. Since August 10th Molaisín has operated under EPA Waste Licence W0245-01.

Molaisín specializes in the composting of non-hazardous industrial and sewage sludges using a controlled static pile, forced aeration system. Molaisín operate the industrial composting facilities using a. The process takes place completely indoors. The incoming wastes are mixed with dry finished compost and other dry amendments. The Molaisín method is based on a scientific enhancement of the natural composting process that creates and maintains an environment conducive to the proliferation of specific microbial populations. These microbes are responsible for biodegradation and, when provided with the right balance of moisture, temperature, and oxygen are able to affect the rapid decay of organic material.

The composting of non-hazardous industrial sludges and biosolids produces a very valuable end product from material that was previously considered a waste. The finished product adds an important micronutrient and humus-rich stable material to soil. The compost produced by Molaisín is a class 1 compost. All compost produced on site is sent for Agricultural and Horticultural use.

2.0 QUANTITY/COMPOSITION OF WASTE RECEIVED, DISPOSED OF AND RECOVERED DURING THE REPORTING PERIOD

2.1 Waste received

The following wastes were received for composting during the reporting period:

Description of Incoming Waste	List of Waste Code	2016
Sludges from onsite effluent treatment (food)	02 02 04	471.88
Materials unsuitable for consumption or processing (food)	02 03 04	42.34
Wastes from sugar processing	02 04 99	24.20
Materials unsuitable for consumption or processing (beverages)	02 07 04	1.58
De-inking sludges from paper recycling	03 03 05	0.84
Sludges from onsite effluent treatment (pharm)	07 05 12	348.12
Hawthorn leaves	07 05 14	151.40
Leaves & lipids	07 05 99	2377.48
Cosmetics industry	07 06 99	213.06
aqueous liquid wastes other than those mentioned in 16 10 01	16 10 02	76.20
Sludges from treatment of urban waste water	19 08 05	4280.70
Sludges from water clarification	19 09 02	11.72
Edible oils and fats	20 01 25	7.02
Septic tank sludge	20 03 04	73.08
Waste from sewage cleaning	20 03 06	4.30
	TOTAL	8083.92

The following amendment materials were used in the composting process:

Amendment Materials	Tonnes
Sawdust	637.66
Woodchip	317.26
TOTAL	954.92

2.2 Compost Removed from Site

The compost produced at the facility is used as an agricultural fertilizer, for landscaping works and as a peat replacement in horticultural products.

Use	Quantity
Agriculture/Horticulture	2794.82
TOTAL	2794.82

3.0 EMISSIONS FROM THE FACILITY

There were no emissions from the facility during the reporting period. Air is extracted from the facility through a biofiltration system. The biofilter was monitored during the reporting period both independently and by Molaisín Compost Limited and there were no emissions noted.

See Attachment 1

4.0 RESOURCE CONSUMPTION SUMMARY

Diesel Usage: 30,871 litres of diesel was used during the reporting period to operate equipment in the facility.

Electricity Usage: From Electricity Bills McGill have used approximately 395,000 kWh of electricity at the facility during the reporting period.

4.0 COMPLAINT SUMMARY

Three complaints were received during October and November 2016. These were from the same complainant and were in relation to a load of waste from a customer that was particularly odourous. The waste was mixed with extra amendment material and the fans in the bays were turned down.

5.0 SCHEDULE OF ENVIRONMENTAL OBJECTIVES AND TARGETS

Objective	Target
Biofilter Maintenance	1. Biofilter to be monitored on a weekly basis, and dug and reseeded as required
Develop written procedures	1. Standard operating procedures are in place, these need to be upgraded to include every aspect of the process
Training	1. On-going training required for all staff in updated health and safety and operational issues
Monitoring	1. Follow schedule based on licence requirements
Staff	1. Adequate cover if an employee is on holidays or away from the facility 2. Training in advance notification of absence
Raw Material Usage	1. Monitor Raw Material usage and analyse results 2. Put procedures in place to maximise efficiency of raw material usage
Energy Audit	1. Reduce Energy consumption on site

6.0 ENVIRONMENTAL MANAGEMENT PROGRAMME

6.1 Report for 2016

Target	Responsibility	Target Date	Status	Last review date
Carry out refresher training for staff	Heather Loughlin	End July 2016	Complete	20.03.2017
Continue with the revision of the Environmental Management System and streamline procedures wherever possible.	Heather Loughlin	End August 2016	Revised loader maintenance sheets and site inspection checklist issued.	20.03.2017
Monitor energy usage and identify opportunities for reductions.	Heather Loughlin/ Niall Carroll	Ongoing	Ongoing. No opportunities identified in 2016.	20.03.2017
Prepare case for reducing monitoring frequency for noise/dust/odour/water, where appropriate.	Heather Loughlin	End April 2016	Case has been prepared and discussed with EPA inspector. To be submitted via EDEN during April 2017.	20.03.2017

6.2 Proposal for 2017

Target	Responsibility	Target Date
Carry out refresher training for staff	Heather Loughlin	End July 2017
Review waste intake documents and simplify the recording system.	Heather Loughlin	End May 2017
Carry out Accident Prevention Plan training.	Heather Loughlin	End March 2017
Monitor energy usage and identify opportunities for reductions.	Heather Loughlin/Niall Carroll	Ongoing
Submit case for reducing monitoring frequency for noise/dust/odour via EDEN	Heather Loughlin	End April 2017

7.0 NOISE MONITORING REPORT SUMMARY

Noise monitoring was conducted on site by KD Environmental on 29th September 2016.

Daytime noise levels were within the permitted noise limit of 55 dB(A) at all four noise measurement locations – N1, N2, N3 and N4.

Evening time noise levels were within the permitted noise limit of 50 dB(A) at three noise measurement locations – N1, N2, N3 and N4.

There was no significant tonal or impulsive noise from site activities during daytime and evening noise monitoring.

The full noise monitoring report is available.

8.0 AMBIENT MONITORING SUMMARY

All monitoring conducted during the year is reported in Attachment 1.

9.0 EMISSIONS AND RESULTS OF ENVIRONMENTAL MONITORING.

- Compost Analysis summary reports for metals and pathogens are attached. The facility produced a “Class 1” compost during 2016.
- All sludges were analysed on a quarterly basis for each client. Records are available for inspection.
- Dust monitoring was carried out on site for four different 30 day periods during 2016. The results of these are attached. The results were within the emission limit values on all occasions.

- Odour Monitoring Ireland (OMI) conducted quarterly Odour Monitoring on site. Bioaerosol and PM10 monitoring was conducted on two occasions in 2016. The results of these visits showed that there were no significant odours or bioaerosol impacts in the vicinity of the facility and the ambient air concentration levels of PM10 were below the statutory 24-hour average ambient air concentration level of 50ug m³.
- Biofilter sampling was conducted as per the licence requirement and summary results are attached. There were no environmental concerns with the results.
- Groundwater sampling was conducted as per the licence requirement and a summary sheet is attached. During a site visit from the EPA in December 2016 it was noted that Nitrate levels in GW2 were high in 2015 and 2016. A summary of the Nitrate levels from pre-application stage to the 2015 was forwarded to the EPA. Nitrate levels in GW2 have been consistently high and are not attributable to the composting operations.
- Surface water sampling was conducted as per the licence requirement and a summary sheet is attached. There were no environmental concerns with the results.

See Attachment 1

10.0 TANK AND PIPELINE TESTING AND INSPECTION REPORT

A report on pipeline testing showing that there are no leaks or spills, was submitted to the Agency in 2014. The next test is due in 2017.

11.0 REPORTED INCIDENTS SUMMARY

There were no reportable incidents during the reporting year.

12.0 ENERGY EFFICIENCY AUDIT REPORT SUMMARY

In 2015 Molaisín Compost used an average of 49KwH electricity and 3.82 litres of diesel per tonne of biosolids accepted at the facility. This is a marginal increase in the usage of diesel when compared to 2015.

There was a small decrease in the amount of electricity used from 2015 to 2016.

No energy efficiency measures were identified in 2016.

13.0 REPORT ON THE ASSESSMENT OF THE EFFICIENCY OF THE USE OF RAW MATERIALS IN PROCESSES AND THE REDUCTION IN WASTE GENERATED

Amendments for the composting process are the only raw materials used on site at Molaisín Compost Limited. The ratio of amendments to waste used during the reporting period was 0.12 tonnes amendment: 1 tonne waste, this less than in 2015 and continues to show a general downward trend.

There was a 31% reduction in the volume of waste and amendment accepted versus compost produced.

14.0 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MINIMISE WATER DEMAND AND THE VOLUME OF TRADE EFFLUENT DISCHARGES

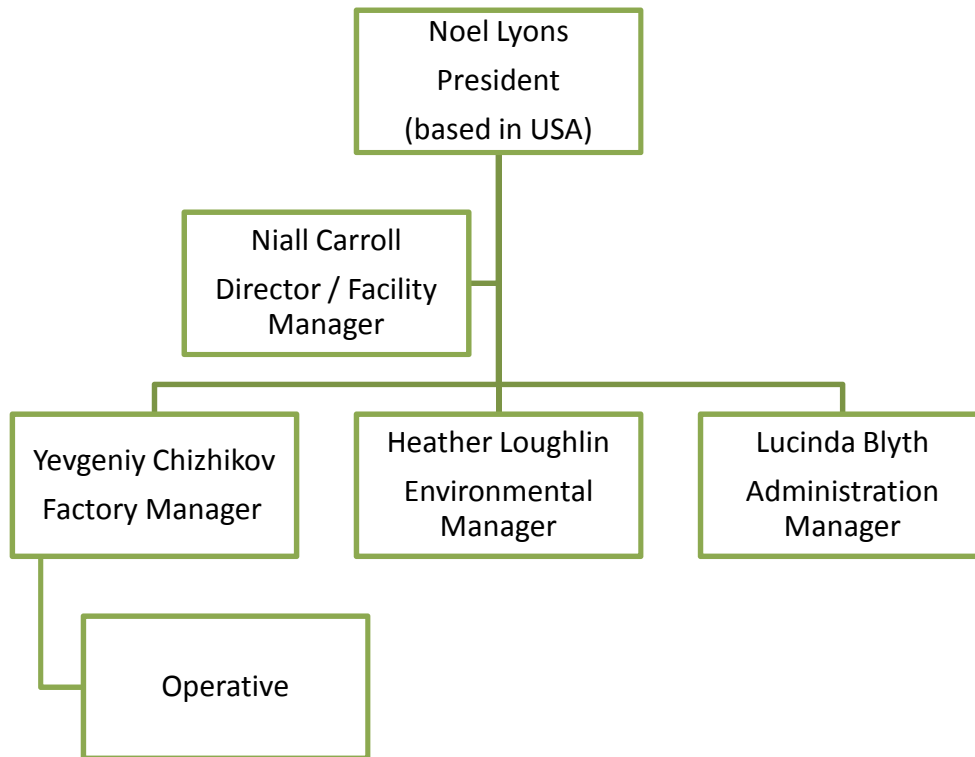
There are no effluent discharges from the process or facility at Molaisín Compost. Water is not added to the process, the only water used is for the cleaning of delivery trucks and equipment to ensure that no waste is carried from the facility out onto the site. The amount of water used cannot be reduced without compromising the cleanliness of the vehicles, equipment, and the site.

15.0 DEVELOPMENT/INFRASTRUCTURAL WORKS SUMMARY

There were no development works carried out in 2016.

16.0 MANAGEMENT AND STAFFING STRUCTURE

During the reporting period, the management and staffing structure was as follows:



17.0 PUBLIC INFORMATION PROGRAMME

A procedure is in place to ensure that the public can obtain information concerning the environmental performance of the facility at all reasonable times.

There were no requests for information during 2016.

18.0 REVIEW OF DECOMMISSIONING MANAGEMENT PLAN / CLOSURE, RESTORATION AND AFTERCARE MANAGEMENT PLAN AND STATEMENT OF MEASURES IN RELATION TO PREVENTION OF ENVIRONMENTAL DAMAGE AND REMEDIAL ACTIONS (ENVIRONMENTAL LIABILITIES)

The Environmental Liabilities Risk Assessment and Decommissioning Plan was reviewed and submitted to the Agency in January 2014. A full review is scheduled for 2017.

19.0 REVIEW OF NUISANCE CONTROLS

A daily check takes place for Vermin, Birds, Flies, Mud, Dust, Odour, Surface Water, and Biofilter Odour. Checklists are maintained on site for inspection.

20.0 VOLUME OF TRADE EFFLUENT / LEACHATE PRODUCED AND TRANSPORTED OFF SITE

There was no trade effluent or leachate produced on site during the reporting period.

Attachment 1

Lab Analysis

Compost Pathogen Results

Sampling date	Molaisin Reference:	Lab Ref:	Faecal Coliforms			Salmonella		
			Result CFU/g	ELV	COMPLIANT	Result 25g	ELV	COMPLIANT
15.03.2016	Q1 2016 Compost sample 1	MCGI-119150316	< 880	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
15.03.2016	Q1 2016 Compost sample 2	MCGI-119150316	< 650	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
15.03.2016	Q1 2016 Compost sample 3	MCGI-119150316	< 620	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
15.03.2016	Q1 2016 Compost sample 4	MCGI-119150316	< 850	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
15.03.2016	Q1 2016 Compost sample 5	MCGI-119150316	< 740	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.06.2016	Q2 2016 sample 1	MCGI-514160616	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.06.2016	Q2 2016 sample 2	MCGI-514160616	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.06.2016	Q2 2016 sample 3	MCGI-514160616	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.06.2016	Q2 2016 sample 4	MCGI-514160616	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.06.2016	Q2 2016 sample 5	MCGI-514160616	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.09.2016	Q3 2016 Sample 1	MCGI-373160916	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.09.2016	Q3 2016 Sample 2	MCGI-373160916	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.09.2016	Q3 2016 Sample 3	MCGI-373160916	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.09.2016	Q3 2016 Sample 4	MCGI-373160916	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
16.09.2016	Q3 2016 Sample 5	MCGI-373160916	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
19.12.2016	1. MCL Q4 2016 Compost	MCGI-164191216	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
19.12.2016	1. MCL Q4 2016 Compost	MCGI-164191216	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
19.12.2016	1. MCL Q4 2016 Compost	MCGI-164191216	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
19.12.2016	1. MCL Q4 2016 Compost	MCGI-164191216	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES
19.12.2016	1. MCL Q4 2016 Compost	MCGI-164191216	< 10	≤ 1000 MPN in 1g	YES	Not detected	Absent in 50g	YES

Compost Metal/ Trace elements Results

Q1 2016							
Parameter	ug/kg	mg/kg	mg/kg DM	mg/kg DM normalise d to 30% OM	Class 1 standard	Class 2 standard	Class of Compost
% Dry Matter	68.42						
% Organic Matter	84.45						
Cadmium (ug/kg)	267.89	0.27	0.39	0.14	0.7	1.5	Class 1
Chromium (ug/kg)	4722.11	4.72	6.90	2.45	100	150	Class 1
Copper (ug/kg)	62768.50	62.77	91.74	32.59	100	150	Class 1
Lead (ug/kg)	25183.10	25.18	36.81	13.08	100	150	Class 1
Mercury (ug/kg)	123.95	0.12	0.18	0.06	0.5	1	Class 1
Nickel (ug/kg)	3902.25	3.90	5.70	2.03	50	75	Class 1
Zinc (ug/kg)	127264.0 0	127.26	186.00	66.08	200	400	Class 1
Impurities >2mm	<0.5%				<0.5%	<0.5%	Class 1
Gravel & stones >5mm	<0.5%				<5%	<5%	Class 1

Q2 2016							
Parameter	ug/kg	mg/kg	mg/kg DM	mg/kg DM normalise d to 30% OM	Class 1 standard	Class 2 standard	Class of Compost
% Dry Matter	76.17						
% Organic Matter	81.24						
Cadmium (ug/kg)	<10	0.01	0.01	0.00	0.7	1.5	Class 1
Chromium (ug/kg)	7278.79	7.28	9.56	3.53	100	150	Class 1
Copper (ug/kg)	101027.0 0	101.03	132.63	48.98	100	150	Class 1
Lead (ug/kg)	29933.10	29.93	39.30	14.51	100	150	Class 1
Mercury (ug/kg)	116.00	0.12	0.15	0.06	0.5	1	Class 1
Nickel (ug/kg)	5230.99	5.23	6.87	2.54	50	75	Class 1
Zinc (ug/kg)	171521.0 0	171.52	225.18	83.15	200	400	Class 1
Impurities >2mm	<0.5%				<0.5%	<0.5%	Class 1
Gravel & stones >5mm	<0.5%				<5%	<5%	Class 1

Q3 2016							
Parameter	ug/kg	mg/kg	mg/kg DM	mg/kg DM normalised to 30% OM	Class 1 standard	Class 2 standard	Class of Compost
% Dry Matter	72.43						
% Organic Matter	85.86						
Cadmium (ug/kg)	<10	0.01	0.01	0.00	0.7	1.5	Class 1
Chromium (ug/kg)	<10	0.01	0.01	0.00	100	150	Class 1
Copper (ug/kg)	91526.70	91.5267	126.37	31.98	100	150	Class 1
Lead (ug/kg)	23579.30	23.5793	32.55	8.24	0.5	1	Class 1
Mercury (ug/kg)	102.47	0.10247 3	0.14	0.04	50	75	Class 1
Nickel (ug/kg)	3689.43	3.68943	5.09	1.29	100	150	Class 1
Zinc (ug/kg)	229792.0 0	229.792	317.26	80.29	200	400	Class 1
Impurities >2mm	<0.5%				<0.5%	<0.5%	Class 1
Gravel & stones >5mm	<0.5%				<5%	<5%	Class 1

Q4 2016							
Parameter	ug/kg	mg/kg	mg/kg DM	mg/kg DM normalised to 30% OM	Class 1 standard	Class 2 standard	Class of Compost
% Dry Matter	67.75						
% Organic Matter	82.73						
Cadmium (ug/kg)	<10	0.01	0.01	0.01	0.7	1.5	Class 1
Chromium (ug/kg)	2520.39	2.52	3.72	1.35	100	150	Class 1
Copper (ug/kg)	82436.70	82.44	121.68	44.12	100	150	Class 1
Lead (ug/kg)	16386.30	16.39	24.19	8.77	0.5	1	Class 1
Mercury (ug/kg)	324.39	0.32	0.48	0.17	50	75	Class 1
Nickel (ug/kg)	2773.30	2.77	4.09	1.48	100	150	Class 1
Zinc (ug/kg)	134859.0 0	134.86	199.05	72.18	200	400	Class 1
Impurities >2mm	<0.5%				<0.5%	<0.5%	Class 1
Gravel & stones >5mm	<0.5%				<5%	<5%	Class 1

Biofilter Monitoring : Colormetric Indicator Tube Testing

Date	Test	ELV	S1	S2
12.04.16	Ammonia	50mg/m ³	Not detected	Not detected
12.04.16	Hydrogen Sulfide	5mg/m ³	Not detected	Not detected
12.04.16	Total Mercaptans	5mg/m ³	Not detected	Not detected
17.11.16	Ammonia	50mg/m ³	Not detected	Not detected
17.11.16	Hydrogen Sulfide	5mg/m ³	Not detected	Not detected
17.11.16	Total Mercaptans	5mg/m ³	Not detected	Not detected

Lab Analysis of Biofilter media

Date	% moisture	Ammonia (mg/kg as N)	pH	TVC's @ 22°C solid (no/g)	TVC's @ 37°C solid (no/g)
25.03.2016	74.89	13.95	4.1	191000	239000
14.12.2016	69.89	143.68	7.9	16400	8200000

Odour Monitoring

Date	15.02.2016	13.04.2016	09.08.2016	11.10.2016
Average Inlet Odour Conc (OuE/m ³)	23,168	19,860	18,388	19,861
Exhaust Odour Conc (OuE/m ³)	1,976	1,694	1,569	1,694
Average Removal Efficiency %	91	91	91	92

Particulate Monitoring

Date	Statutory 24 hr average conc.	PM10 (µg/m ³)
12.04.2016	50 µg/m ³ PM10	5.5
09.08.2016	50 µg/m ³ PM10	4.9

Bioaerosol Monitoring

	Date: 12.04.2016		
LOCATION ID	Average Asperillus fumigatus concentration (CFU m-3) 1	Average Mesophilic Bacteria concentration (CFU m-3) 1	Sample Count
Cappo 1	<3.50	100	6
Cappo 2	90	485	6
Cappo 3	7.5	290	6

Surface Water Monitoring

Date	Lab Reference	Ammonia mg/l as N	BOD mg/l	Total Suspended Solids mg/l
19.12.16	0360/434/16	2.13	<2	2

Dust Monitoring

Sampling End Date	McGill Reference	Monitoring point	Units	ELV	Result	Compliant
12.03.15	MCL DM1 Q1-2015	DM1	mg/m ² /day	350	92.79	YES
12.03.15	MCL DM2 Q1-2015	DM2	mg/m ² /day	350	19.92	YES
12.03.15	MCL DM3 Q1-2015	DM3	mg/m ² /day	350	29.88	YES
12.03.15	MCL DM4 Q1-2015	DM4	mg/m ² /day	350	26.21	YES
13.06.16	MCL DM1 Q2-2015	DM1	mg/m ² /day	350	35.12	YES
13.06.16	MCL DM2 Q2-2015	DM2	mg/m ² /day	350	29.88	YES
13.06.16	MCL DM3 Q2-2015	DM3	mg/m ² /day	350	30.41	YES
13.06.16	MCL DM4 Q2-2015	DM4	mg/m ² /day	350	34.6	YES
19.09.16	MCL DM1 Q3-2015	DM1	mg/m ² /day	350	195.01	YES
19.09.16	MCL DM2 Q3-2015	DM2	mg/m ² /day	350	128.96	YES
19.09.16	MCL DM3 Q3-2015	DM3	mg/m ² /day	350	142.59	YES
19.09.16	MCL DM4 Q3-2015	DM4	mg/m ² /day	350	14.68	YES
09.12.16	MCL DM1 Q4-2015	DM1	mg/m ² /day	350	35.95	YES
09.12.16	MCL DM2 Q4-2015	DM2	mg/m ² /day	350	45.5	YES
09.12.16	MCL DM3 Q4-2015	DM3	mg/m ² /day	350	3.93	YES
09.12.16	MCL DM4 Q4-2015	DM4	mg/m ² /day	350	34.82	YES

Groundwater monitoring

	Units	GW1	GW2	GW3
Ammonia Nitrogen (as N)	mg/l	0.02	17.55	0.03
Nitrate Nitrogen (as N)	mg/l	4.6	59.3	4.2
Conductivity	uS/cm	253	553	270
pH Value	pH unit	6.8	6.2	6.7
Chloride	mg/l	20	12.1	16.3
Total Nitrogen	mg/l	4.1	87.8	3.6
Total Coliforms	MPN/100ml	0	35	0
Faecal Coliforms	MPN/100ml	3	687	26

				GW1	GW2	GW3					
Sub-Matrix: WATER											
				Client sample ID		2539412		2539413		2539414	
				Laboratory sample ID		PR17P0072001		PR17P0072002		PR17P0072003	
				Client sampling date / time		22-DEC-2016 00:00		22-DEC-2016 00:00		22-DEC-2016 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU		
BTEX											
Benzene	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
Toluene	W-VOCGMS01	0.50	µg/L	<0.50	---	<0.50	---	<0.50	---		
Ethylbenzene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
meta- & para-Xylene	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
ortho-Xylene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
Sum of BTEX	W-VOCGMS01	1.10	µg/L	<1.10	---	<1.10	---	<1.10	---		
Sum of xylenes	W-VOCGMS01	0.30	µg/L	<0.30	---	<0.30	---	<0.30	---		
Sum of TEX	W-VOCGMS01	0.90	µg/L	<0.90	---	<0.90	---	<0.90	---		
Halogenated Volatile Organic Compounds											
1.1.1.2-Tetrachloroethane	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.1.1-Trichloroethane	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.1.2.2-Tetrachloroethane	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
1.1.2-Trichloroethane	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
1.1-Dichloroethane	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.1-Dichloroethene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.1-Dichloropropene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
1.2.3-Trichlorobenzene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.2.3-Trichloropropane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
1.2.4-Trichlorobenzene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.2-Dibromo-3-chloropropane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
1.2-Dibromoethane (EDB)	W-VOCGMS01	0.50	µg/L	<0.50	---	<0.50	---	<0.50	---		
1.2-Dichlorobenzene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.2-Dichloroethane	W-VOCGMS01	0.50	µg/L	<0.50	---	<0.50	---	<0.50	---		
1.2-Dichloropropane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
1.3.5-Trichlorobenzene	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
1.3-Dichlorobenzene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
1.3-Dichloropropane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
1.4-Dichlorobenzene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
2.2-Dichloropropane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
2-Chlorotoluene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		

Sub-Matrix: WATER				Client sample ID		2539412		2539413		2539414	
				Laboratory sample ID		PR17P0072001		PR17P0072002		PR17P0072003	
				Client sampling date / time		22-DEC-2016 00:00		22-DEC-2016 00:00		22-DEC-2016 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU		
4-Chlorotoluene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Bromobenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Bromochloromethane	W-VOCGMS01	2.0	µg/L	<2.0	---	<2.0	---	<2.0	---		
Bromodichloromethane	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
Bromoform	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
Bromomethane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Chlorobenzene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
Chloroethane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Chloroform	W-VOCGMS01	0.10	µg/L	0.18	±40.0 %	<0.10	---	0.13	±40.0 %		
Chloromethane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
cis-1,2-Dichloroethene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
cis-1,3-Dichloropropene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Dibromochloromethane	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
Dibromomethane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Dichlorodifluoromethane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Dichloromethane	W-VOCGMS01	6.0	µg/L	<6.0	---	<6.0	---	<6.0	---		
Hexachlorobutadiene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Sum of 3 Dichlorobenzenes	W-VOCGMS01	0.30	µg/L	<0.30	---	<0.30	---	<0.30	---		
Sum of 3 Trichlorobenzenes	W-VOCGMS01	0.40	µg/L	<0.40	---	<0.40	---	<0.40	---		
Sum of 4 Trihalomethanes	W-VOCGMS01	0.50	µg/L	<0.50	---	<0.50	---	<0.50	---		
Sum of 5 Chlorinated Ethenes	W-VOCGMS01	0.60	µg/L	<0.60	---	<0.60	---	<0.60	---		
Tetrachloroethene	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
Tetrachloromethane	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
trans-1,2-Dichloroethene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
trans-1,3-Dichloropropene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		

Sub-Matrix: WATER				Client sample ID		2539412		2539413		2539414	
				Laboratory sample ID		PR17P0072001		PR17P0072002		PR17P0072003	
				Client sampling date / time		22-DEC-2016 00:00		22-DEC-2016 00:00		22-DEC-2016 00:00	
Parameter	Method	LOR	Unit	Result	MU	Result	MU	Result	MU		
Halogenated Volatile Organic Compounds - Continued											
Trichloroethene	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
Trichlorofluoromethane	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Vinyl chloride	W-VOCGMS01	0.10	µg/L	<0.10	---	<0.10	---	<0.10	---		
Sum of 1,2-Dichloroethenes	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
Non-Halogenated Volatile Organic Compounds											
1,2,4-Trimethylbenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
1,3,5-Trimethylbenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Diisopropyl ether (DIPE)	W-VOCGMS01	0.60	µg/L	<0.60	---	<0.60	---	<0.60	---		
Ethyl tert-Butyl Ether (ETBE)	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
Isopropylbenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Methyl tert-Butyl Ether (MTBE)	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
n-Butylbenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
n-Propylbenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
p-Isopropyltoluene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
sec-Butylbenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Styrene	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
Sum of BTEXS	W-VOCGMS01	1.30	µg/L	<1.30	---	<1.30	---	<1.30	---		
tert-Amyl Ethyl Ether (TAEE)	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
tert-Amyl Methyl Ether (TAME)	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
tert-Butyl alcohol	W-VOCGMS01	5.0	µg/L	<5.0	---	<5.0	---	<5.0	---		
tert-Butylbenzene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		
Indane	W-VOCGMS01	0.20	µg/L	<0.20	---	<0.20	---	<0.20	---		
1,4-Dioxane	W-VOCGMS01	50	µg/L	<50	---	<50	---	<50	---		
Polycyclic Aromatics Hydrocarbons (PAHs)											
Naphthalene	W-VOCGMS01	1.0	µg/L	<1.0	---	<1.0	---	<1.0	---		

