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SURFACE WATER

QUARTERLY MONITORING REPORT

RILTA ENVIRONMENTAL LTD

GREENOGUE BUSINESS PARK FACILITY

LICENCE NO. W0185-01

1st Quarter 2017

(January, February & March 2017)

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Prepared For: -

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

Prepared By: -

O' Callaghan Moran & Associates,
Unit 15 Melbourne Business Park,
Model Farm Road,
Cork.

23 March 2017

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Project	Quarterly Monitoring Programme Report SURFACE WATER			
Client	RILTA Environmental Ltd W0185-01			
Report No	Date	Status	Prepared By	Reviewed By
1950202	22/03/2017	Draft	Neil Sandes PGeo	Jim O'Callaghan MSc.
	23/03/2017	Final		

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1. INTRODUCTION

RILTA Environmental Ltd (RILTA) appointed O'Callaghan Moran & Associates (OCM) to conduct the annual environmental monitoring programme at its Waste Licence (Reg.No.W0185-01) facility at Greenogue Business Park, Rathcoole, County Dublin.

1.1 Reporting Period

This is the report on the surface water monitoring completed in the first calendar quarter (January, February & March) 2017.

1.2 Contributors to the Report

- **Rilta** was responsible for the collection of the sample.
- **Exova Jones Environmental Ltd** analysed the surface water sample at their laboratory in the UK.
- **OCM** was responsible for the preparation of this report.

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The report preparation was carried out by Mr. Neil Sandes PGeo and reviewed by Mr. Jim O'Callaghan MSc. The report is accurate and representative of the monitoring completed in the 1st calendar Quarter 2017 (surface water).

Neil Sandes

Jim O' Callaghan

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1.3 Monitoring and Reporting Requirements

The Licence requires the sampling of one on site surface water monitoring point on a quarterly basis for the parameters listed in Table 1.1.

Table 1.1 Monitoring Requirements

Parameter	Sampling Frequency
pH	Quarterly
Electrical Conductivity	Quarterly
COD	Quarterly

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2. SURFACE WATER MONITORING

2.1 Sampling Locations

The monitoring location is at the final surface water discharge point for the site, which is shown on Figure 2.1.

2.2 Methods

2.2.1 Sampling

SW-1 was sampled on the 3rd March 2017. The sample was stored in a chilled cooler box to maintain sample temperature below 9°C and submitted to Exova Jones Environmental within the required holding period. Chain of custody (COC) documentation was included with the sample shipped to the laboratory.

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2.2.2 Analysis

The sample was analysed for the range of parameters listed in Schedule D of the Licence, which includes pH, electrical conductivity and COD. The methodologies were all ISO/CEN approved or equivalent and the method detection limits for all of the analyses were lower than the relevant environmental standards.

2.3 Results

The analytical results are presented in Table 2.1 and the full laboratory report is in Appendix 1. There are no ELVs or trigger levels set in the Licence, but following a request from the Agency, trigger levels were developed in September 2015 and are included in the Table. The trigger levels were issued to the Agency for approval but this has not been received at the time of writing. The Table also includes for comparative purposes the environmental quality standards (EQS) set out in the Surface Water Environmental Objectives (Surface Water) Regulations 2009 (SI 272 of 2009

Following a request from the Agency, trigger levels were developed in September 2015 in accordance with the Agency's guidance on setting of trigger levels for storm water discharges to off-site surface waters at EPA licensed IPPC & Waste facilities based on data from Q-1 2009 to Q-3 2015 and the results are compared to these.

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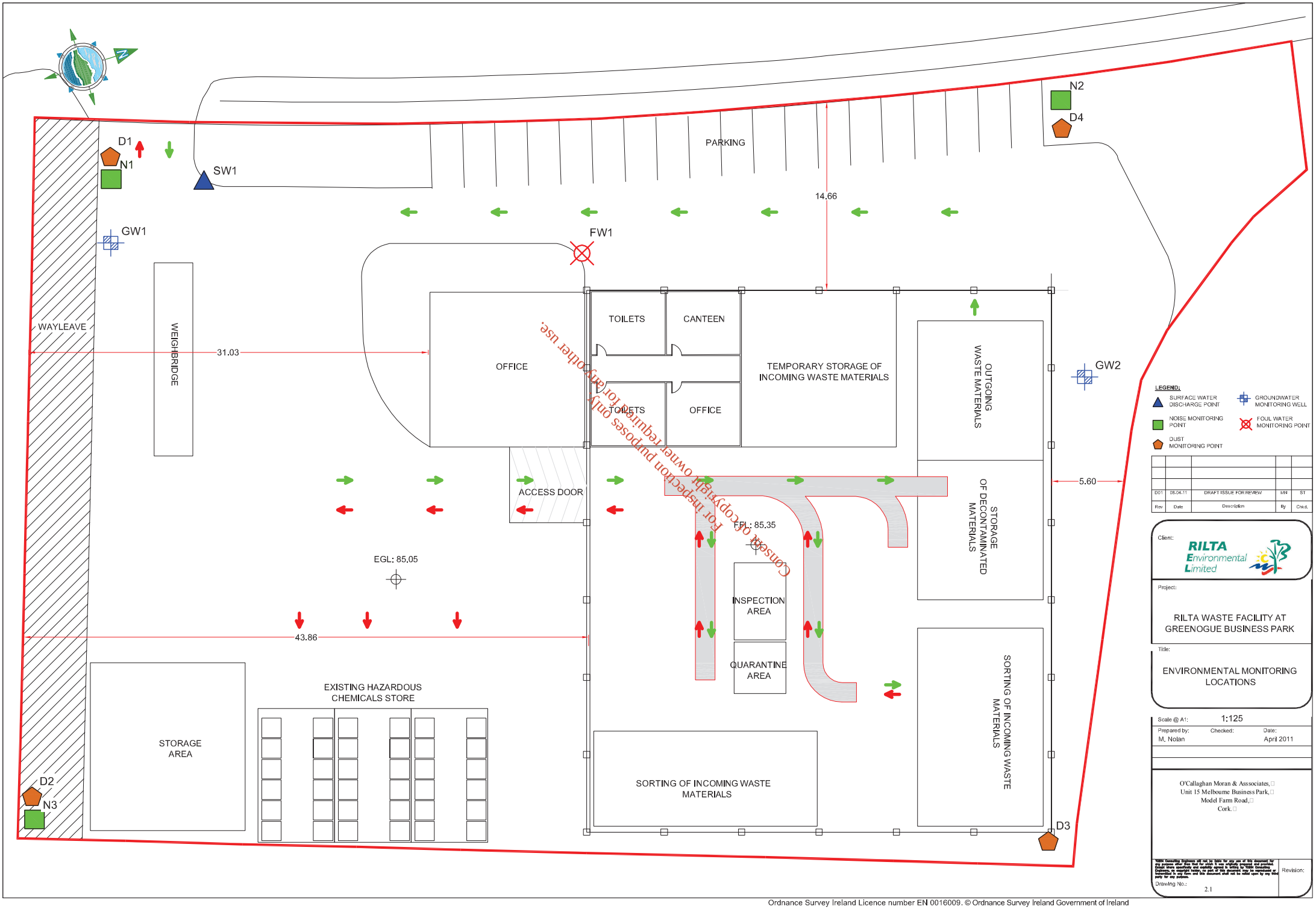

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Table 2.1 Q3 2016 Monitoring Data

Parameter	Unit	SW-1	EQS	Warning Level	Action Level
pH	pH Units	6.68	6.5 – 9.0	8.78	9.34
EC	µS/cm	168	NE	573	715
COD	mg/l	<7	NE	57	76

NE – limit not established

2.4 Discussion

The pH was within the EQS range, and all parameter were below their respective warning trigger levels.

2.5 Trend Analysis

An assessment of the pH, COD and electrical conductivity trends was carried out using the results from Q1 2015 to the most recent monitoring round.

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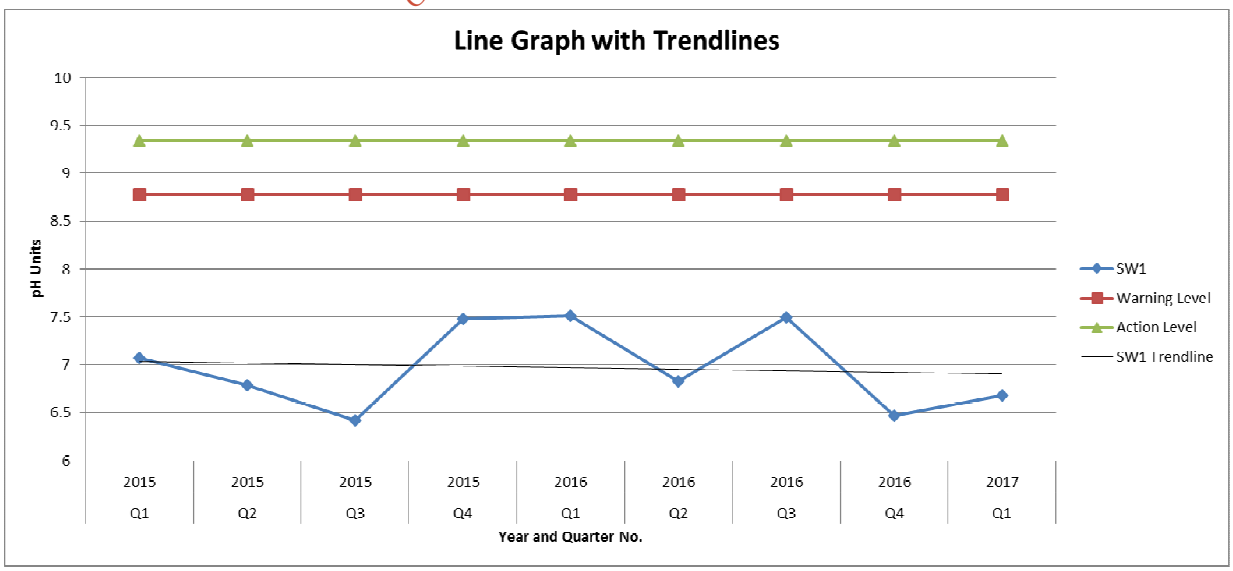
2.5.1 pH

Figure 2.2 plots the pH values trends since Q1 2015.

Figure 2.2 pH Trend Data



The average value is 6.97 pH Units. The trend shows that the pH level is falling over the monitored period. The pH EQS ranges from 6.5 and 9.5 and all results except for Q3 2015

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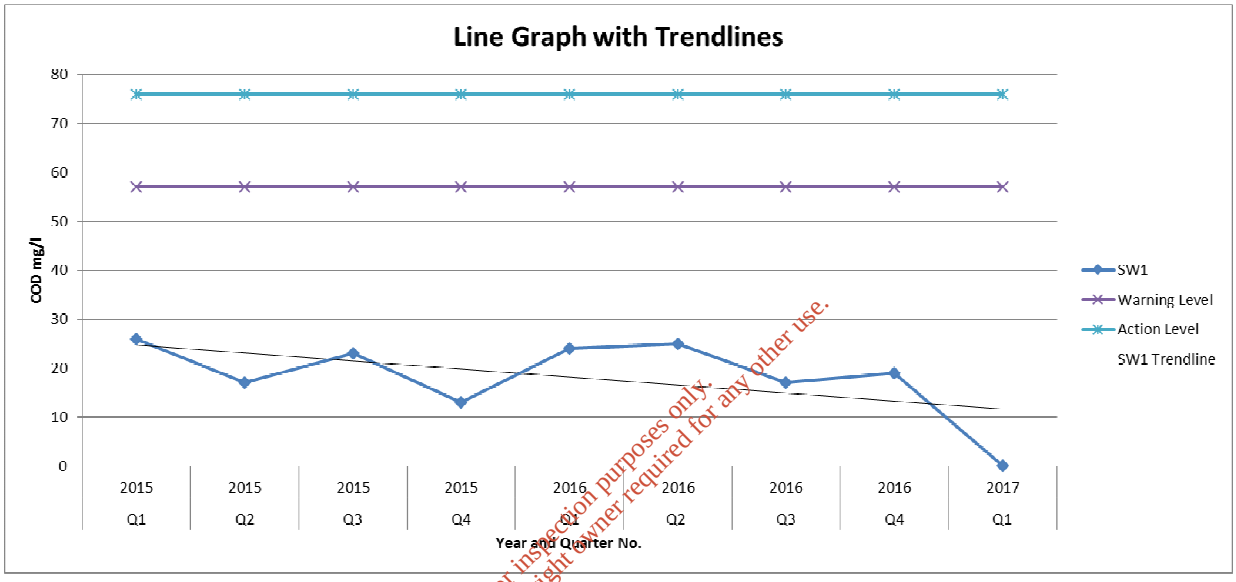
and Q4 2016 are within this range. The pH values in Q3 2015 (6.42) and Q4 2016 (6.47) were marginally below the lower EQS value.

2.5.2 COD

Figure 2.3 plots the COD trend since Q1 2015. The trend shows that the COD level is falling over the monitored period. There is no EQS for COD and the concentrations are well below the warning trigger levels

Figure 2.3 COD Trend Data



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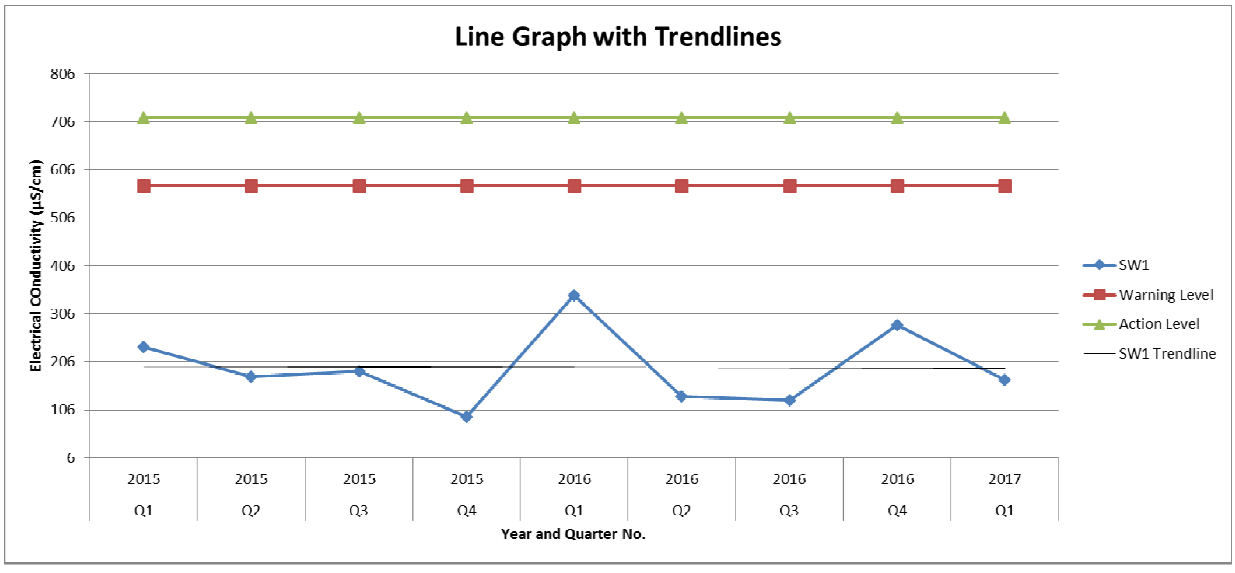
2.5.3 Electrical Conductivity

Figure 2.4 plots the electrical conductivity (EC) since Q1 2015. There is no EQS for EC and the values are well below the warning trigger level.

Figure 2.4 EC Trend Data



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APPENDIX 1

Monitoring Results

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Exova Jones Environmental

Registered Address : Exova (UK) Ltd, Lochend Industrial Estate, Newbridge, Midlothian, EH28 8PL

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Zone 3
Deeside Industrial Park
Deeside
CH5 2UA

Tel: +44 (0) 1244 833780
Fax: +44 (0) 1244 833781

O'Callaghan Moran & Associates
Unit 15
Melbourne Business Park
Model Farm
Cork
Ireland

4225

Attention :	Neil Sandes
Date :	20th March, 2017
Your reference :	16-192-02
Our reference :	Test Report 17/5066 Batch 1
Location :	Rilta W0185-01
Date samples received :	8th March, 2017
Status :	Final report
Issue :	1

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One sample was received for analysis on 8th March, 2017 of which one was scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Compiled By:

Bruce Leslie
Project Co-ordinator

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Client Name: O'Callaghan Moran & Associates
Reference: 16-192-02
Location: Rilta W0185-01
Contact: Neil Sandes
JE Job No.: 17/5066

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H_2SO_4, Z=ZnAc, N=NaOH, HN=$HN0_3$

J E Sample No.	1										Please see attached notes for all abbreviations and acronyms		
Sample ID	SW-1												
Depth													
COC No / misc													
Containers	P												
Sample Date	03/03/2017												
Sample Type	Surface Water												
Batch Number	1										LOD/LOR	Units	Method No.
Date of Receipt	08/03/2017												
COD (Settled) #	<7										<7	mg/l	TM57/PM0
Electrical Conductivity @25C #	168										<2	uS/cm	TM76/PM0
pH #	6.68										<0.01	pH units	TM73/PM0

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Client Name: O'Callaghan Moran & Associates

Matrix : Liquid

Reference: 16-192-02

Location: Rilta W0185-01

Contact: Neil Sandes

J E Job No.	Batch	Sample ID	Depth	J E Sample No.	Analysis	Reason
17/5066	1					Liquid Samples were received at a temperature above 9°C.

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Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.

Only analyses which are accredited are recorded as deviating if set criteria are not met.

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NOTES TO ACCOMPANY ALL SCHEDULES AND REPORTS

JE Job No.: 17/5066

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overesitimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory.

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters, the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

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DEVIATING SAMPLES

Samples must be received in a condition appropriate to the requested analyses. All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. If this is not the case you will be informed and any test results that may be compromised highlighted on your deviating samples report.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.
Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

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ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS) accredited - UK.
SA	ISO17025 (SANAS) accredited - South Africa.
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
++	Result outside calibration range, results should be considered as indicative only and are not accredited.
*	Analysis subcontracted to a Jones Environmental approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

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JE Job No: 17/5066

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/SANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM57	Modified US EPA Method 410.4. Chemical Oxygen Demand is determined by hot digestion with Potassium Dichromate and measured spectrophotometerically.	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 and 9045D. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM76	Modified US EPA method 120.1. Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			

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