

APPENDIX D
Site Investigation Factual Report

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Our Ref: GH/Rp/P15180 + attachments (*.pdf)

27th May, 2016

Messrs. RPS

West Pier Business Campus,

Dun Laoghaire,

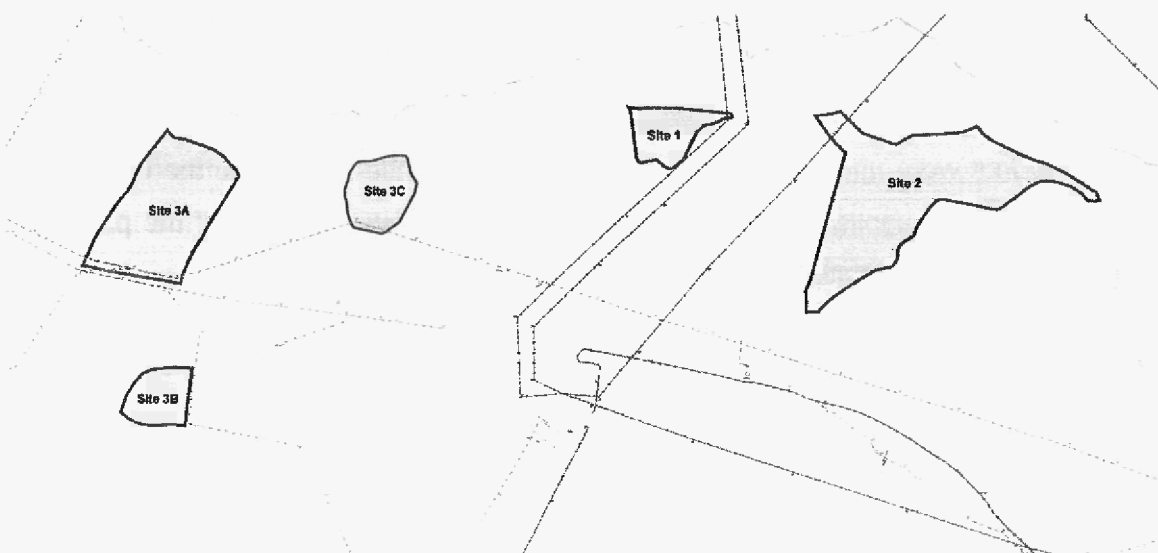
County Dublin.

Ireland

Re: Fassaroe Historic Landfills, Site Investigations, Factual Report

Introduction

In November, 2015, Priority Geotechnical (PGL) were requested by RPS to undertake a direct ground investigation across five (5) number historical landfill sites in Fassaroe, Co. Wicklow.



Scope

The revised scope of the ground investigation, which was specified by RPS, comprised of the following:

- 28No. trial pit excavations;
- 10No. cable percussion boreholes;
- 47No. rotary boreholes (provisional);
- Installation and monitoring groundwater / ground gas standpipes and
- Factual reporting.

Objectives

The purpose of the investigation was to install standpipe wells to allow for the monitoring by Others, of groundwater and ground gas.

This factual report presents the records and data obtained with regard to the ground investigation and should be read in conjunction with the exploratory and photographic records accompanying this factual report.

Site Works

This investigation was carried out in accordance with the contract specification: Eurocode 7- Geotechnical Design Part 2, ground investigation and testing (BS EN 1997-2: 2007) and the relevant British Standards (BS 5930 (1999) Code of Practice for Site Investigation +A2:2010 and BS 1377, Method of Tests for Soil for Civil Engineering Purposes, *in situ* Tests Parts 1 to 9).

The fieldworks were undertaken between the 07th December, 2015 and the 01st March, 2016 under the supervision of PGL, Engineering Geologist(s). Details of the plant and equipment used are detailed on the relevant exploratory records, attached.

Trial pit excavations

A total of twenty eight (28) number trial pit excavations (TP01 to TP28 inclusive) were excavated to depths of 3.5m below existing ground level (bgl) to 4.5m bgl using a 13t tracked excavator. Trial pits terminated for a variety of reasons, these being outlined on the relevant exploratory records attached, herein.

Cable percussion boreholes

A total of ten (10) cable percussion boreholes (CP) were bored using a Dando 2000 light cable percussive rig with 200mm diameter casing. The records are attached, herein.

Two (2) cable percussion boreholes (LG¹17 and LG21) were bored to depths between 5.5m bgl and 5.7m bgl. These boreholes were terminated after one (1) hour of chiseling on obstructions within the municipal solid (MSW) and mixed waste.

A further eight (8) number cable percussion boreholes (LG02, LG04, LG07, LG10, LG11, LG14, LG15 and LG19) were bored to depths 0.5m bgl (LG11) to 10.7m bgl. The boreholes were terminated after one (1) hour of chiseling (on obstructions within the MSW). These were subsequently followed on with rotary open-hole drilling.

Rotary boreholes

Fifty five (55²) rotary boreholes (LG01, LG02, LG03, LG04, LG05, LG06, LG07, LG08, LG09, LG10, LG11, LG12, LG13, LG14, LG15, LG16, LG18, LG19 and LG20; BH³01, BH03, BH04, BH05, BH06, BH07, BH08, BH09, BH10, BH11 and BH13; G⁴01, G02, G03, G04, G05, G06, G07, G08, G09, G10, G11, G12, G13, G14, G15, G16, G17, G18, G19, G20, G21, G22, G23, G24 and G25) were drilled by Symmetrex open hole boring (RO/RC), to depths between 6.0m bgl and 35.0m bgl using a PGL's Deltabase 520, 6t rotary rig. The records are attached, herein.

Survey and Drawings

¹ LG combined gas/ leachate monitoring well

² 47 No. rotary boreholes with 8No. cable percussion with subsequent rotary follow-on shown in italic, 55No. in total.

³ BH combined groundwater/ gas monitoring well

⁴ G gas monitoring well

Upon completion of the fieldworks, the 'as built' exploration locations were surveyed using Trimble 5700/5800 GPS equipment to the Ordinance Survey Irish Transverse Mercator system of co-ordinates (ITM) and elevations (existing ground level) to Malin Head datum. The exploratory locations were shown on the Exploratory Location Plan (dwg. P15180-SI-A, P15180-SI-01 and P15180-SI-02, attached).

SUMMARY OF GROUND INVESTIGATION

Location	Easting	Northing	Ground level mOD, Malin	Depth, m bgl	Start date dd/mm/yyyy	Borehole type
BH01	723751.99	718464.30	79.22	21.00	04/02/2016	RO
BH03	723833.94	718313.09	78.65	19.50	04/02/2016	RO
BH04	723658.95	718159.83	84.41	25.50	17/02/2016	RO
BH05	723381.97	718381.36	96.06	35.00	27/01/2016	RO
BH06	723028.34	718310.42	95.27	14.00	17/02/2016	RO
BH07	722641.50	718220.00	106.11	21.00	09/02/2016	RO
BH08	722752.55	718129.88	98.80	13.50	09/02/2016	RO
BH09	722746.09	718179.23	97.97	12.00	09/02/2016	RO
BH10	722791.60	718279.04	99.31	14.00	11/02/2016	RO
BH11	723802.55	718268.99	82.65	33.00	24/02/2016	RO
BH13	723633.99	718448.25	87.99	19.50	03/02/2016	RO
G01	723757.16	718233.48	84.99	19.30	23/02/2016	RO
G02	723906.63	718311.72	72.66	19.50	03/02/2016	RO
G03	723983.99	718344.07	69.50	19.50	08/02/2016	RO
G04	723640.81	718281.92	85.62	20.00	22/01/2016	RO
G05	723638.54	718344.71	86.72	20.00	27/01/2016	RO
G06	723574.11	718441.69	90.99	12.00	26/01/2016	RO
G07	723368.28	718433.97	93.03	14.00	28/01/2016	RO
G08	723306.94	718326.45	94.29	14.00	29/01/2016	RO
G09	723094.22	718349.84	93.56	15.00	17/02/2016	RO
G10	723333.19	718171.75	98.86	20.00	04/02/2016	RO
G11	722977.05	718343.28	97.21	15.00	18/02/2016	RO
G12	722830.39	718345.89	98.91	14.00	12/02/2016	RO
G13	724005.71	718058.48	75.82	20.00	26/02/2016	RO
G14	722815.16	718240.44	98.62	14.00	11/02/2016	RO
G15	722795.09	718080.09	99.17	6.00	08/02/2016	RO
G16	722652.69	718073.96	100.38	6.00	08/02/2016	RO
G17	722714.71	718133.46	98.42	6.00	08/02/2016	RO
G18	723510.87	718384.05	93.73	14.00	01/02/2016	RO
G19	723436.56	718295.62	98.24	14.00	02/02/2016	RO

Location	Easting	Northing	Ground level mOD, Malin	Depth, m bgl	Start date dd/mm/yyyy	Borehole type
G20	723622.08	718199.83	85.55	27.00	02/02/2016	RO
G21	723750.29	718164.27	86.66	20.00	23/02/2016	RO
G22	724131.18	717889.25	63.68	20.00	01/03/2016	RO
G23	723934.27	717921.64	78.95	20.00	29/02/2016	RO
G24	723786.07	718048.15	86.83	20.00	25/02/2016	RO
G25	723664.35	718398.59	85.64	34.00	03/02/2016	RO
LG01	723643.77	718221.92	83.76	16.00	21/01/2016	RO
LG02	723692.44	718261.44	83.19	12.00	11/02/2016	CP+RO
LG03	723751.30	718307.50	82.25	29.00	20/01/2016	RO
LG04	723728.58	718362.08	81.88	18.00	10/02/2016	CP+RO
LG05	723787.00	718340.40	80.14	25.50	15/01/2016	RO
LG06	723716.45	718432.32	82.68	17.50	20/01/2016	RO
LG07	723798.30	718404.52	74.87	17.50	10/02/2016	CP+RO
LG08	723854.76	718376.73	70.77	19.50	29/01/2016	RO
LG09	723827.26	718410.84	71.06	25.50	02/02/2016	RO
LG10	723905.21	718400.28	66.37	21.00	08/02/2016	CP+RO
LG11	723425.30	718455.26	95.37	17.00	18/02/2016	CP+RO
LG12	723436.86	718445.09	95.96	24.00	27/01/2015	RO
LG13	723466.52	718463.67	96.08	20.00	22/02/2016	RO
LG14	723040.80	718343.19	93.44	23.00	15/02/2016	CP+RO
LG15	722726.87	718288.02	103.97	20.00	17/02/2016	CP+RO
LG16	722747.85	718100.42	99.52	16.00	04/02/2016	RO
LG17	722707.07	718059.11	100.51	5.50	18/02/2016	CP
LG18	723040.16	718381.47	92.42	22.00	15/02/2016	RO
LG19	722742.40	718394.04	103.90	26.00	16/02/2016	CP+RO
LG20	722760.54	718333.71	103.82	23.00	10/02/2016	RO
LG21	722746.33	718045.61	100.58	5.70	17/02/2016	CP
TP01	723682.650	718266.990	83.330	4.40	07/12/2015	TP
TP02	723757.630	718269.220	83.070	4.50	07/12/2015	TP
TP03	723683.290	718342.000	83.580	4.60	07/12/2015	TP
TP04	723757.610	718343.860	81.520	4.50	07/12/2015	TP
TP05	723698.180	718417.170	83.950	4.50	08/12/2015	TP
TP06	723755.250	718417.290	80.070	4.00	08/12/2015	TP
TP07	723831.840	718416.680	70.030	4.50	08/12/2015	TP
TP08	723833.740	718361.200	73.400	4.50	08/12/2015	TP
TP09	723908.990	718418.510	64.870	4.50	08/12/2015	TP
TP10	723909.820	718348.090	69.450	4.50	08/12/2015	TP
TP11	723982.100	718386.820	65.940	4.50	08/12/2015	TP

Location	Easting	Northing	Ground level mOD, Malin	Depth, m bgl	Start date dd/mm/yyyy	Borehole type
TP12	723414.490	718450.110	95.190	4.50	08/12/2015	TP
TP13	723458.970	718444.410	96.120	4.50	08/12/2015	TP
TP14	723414.970	718423.270	95.650	4.50	08/12/2015	TP
TP15	723447.720	718424.380	96.270	4.50	08/12/2015	TP
TP16	723014.000	718380.990	92.170	4.50	09/12/2015	TP
TP17	723040.130	718358.270	93.520	4.50	09/12/2015	TP
TP18	723014.330	718340.980	93.960	4.50	09/12/2015	TP
TP19	723059.400	718333.160	92.690	4.50	09/12/2015	TP
TP20	722705.010	718384.460	105.130	4.50	10/12/2015	TP
TP21	722764.010	718385.630	103.150	4.50	10/12/2015	TP
TP22	722808.050	718372.090	102.300	4.50	10/12/2015	TP
TP23	722761.860	718310.220	103.650	4.50	09/12/2015	TP
TP24	722687.960	718312.140	105.530	4.50	10/12/2015	TP
TP25	722707.430	718045.320	100.980	4.50	10/12/2015	TP
TP26	722708.270	718080.970	99.720	4.50	10/12/2015	TP
TP27	722758.680	718109.210	99.540	4.50	10/12/2015	TP
TP28	722757.060	718081.290	99.580	3.50	10/12/2015	TP

Sampling

No sampling was required.

In-situ testing

No *in situ* testing was required.

Laboratory Testing

No laboratory testing was required.

Published Geology

The geology of the study area (GSI 1:100,000 mapping Sheet 16) is characterised by the Maulin Formation, (MN) described as dark blue-grey Slate, Phyllite and Schist. And the Glencullen River Formation (GL) described as buff-coloured Tuff and Greywacke. The formations are delineated by a geological fault structure. A geological thrust feature lay immediately south of the study area. Teagasc subsoil mapping indicates that the area is underlain by glaciofluvial sands and gravels.

Ground conditions

Waste was encountered to depths up to 19m below existing ground level (bgl). This was underlain by CLAY and SAND and GRAVEL deposits to depths up to 35m bgl.

The full details of the ground conditions encountered are provided for on the exploratory records accompanying this report. The records provide descriptions, in accordance with BS 5930 (1999) +A2: 2010 and Eurocode 7, Geotechnical Investigation and Testing, Identification and classification of soils, Part 1, Identification and description (EN ISO 14688-1: 2002),– Identification and Classification of Soil, Part 2: Classification Principles (EN ISO 14688-2:2004) and Identification and Classification of Rock, Part 1: Identification & Description (EN ISO 14689-1:2004) of the materials encountered, , together with any observations made during the ground investigation.

Ground water conditions

Groundwater was recorded when encountered during boring over a period of 20 minutes, noting any changes that may occur in cable percussion boreholes. Groundwater levels were also monitored at start and end of drilling shifts.

It should be noted that the normal rate of boring may not permit the recording of equilibrium groundwater levels for any one groundwater water strike where casing may exclude low volume flows or perched groundwater/ leachate as the borehole progresses. Groundwater conditions observed in the borings or pits are those appertaining to the period of the investigation. Groundwater levels may be subject to diurnal, seasonal and climatic variations and can also be affected by drainage conditions, tidal variations etc. Note wet strata were encountered with no significant flow of groundwater / leachate.

The groundwater regime should be assessed from standpipe well installations, where available. A summary of groundwater is presented below and detailed on the exploratory records, herein.

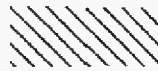
SUMMARY OF GROUNDWATER

Location	Depth of water strike, m bgl
BH01	15.00
BH04	18.70
BH05	24.00
BH06	6.10
BH08	13.50
BH09	6.00
BH10	6.00
BH10	9.10
BH13	11.10
G02	3.20
G09	13.30
G10	20.00
G11	12.00
G12	14.00
G14	6.00
G23	19.50
LG01	3.00
LG01	10.20
LG02	7.30
LG03	6.00
LG03	11.10
LG04	9.70
LG04	12.10
LG06	16.60
LG07	9.30
LG14	23.00
LG16	1.20
LG16	11.20
LG18	22.00
LG19	6.80
LG19	26.00
TP01	3.50
TP09	1.50
TP10	1.20
TP23	4.00
TP24	3.00

Fifty seven (57) number 50mm diameter HDPE groundwater standpipe installations were installed, else exploratory boreholes were backfilled with arisings.



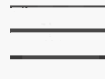
Arisings, backfill to borehole



BENTONITE, backfill to installation/ borehole



GRAVEL, backfill to installation/ borehole



uPVC slotted pipe (well)

Rubber bung and valve, gas taps were fitted to all fifty five (55) number wells.

The standpipe well construction is summarized as follows;

Well	Interval m bgl		Pipework
BH01	0.0	5.0	Plain pipe
	5.0	21.0	Slotted pipe
BH03	0.0	4.5	Plain pipe
	4.5	19.5	Slotted pipe
BH04	0.0	13.0	Plain pipe
	13.0	25.5	Slotted pipe
BH05	0.0	19.0	Plain pipe
	19.0	29.0	Slotted pipe
BH06	0.0	2.0	Plain pipe
	2.0	14.0	Slotted pipe
BH07	0.0	11.0	Plain pipe
	11.0	21.0	Slotted pipe
BH08	0.0	3.5	Plain pipe
	3.5	13.5	Slotted pipe
BH09	0.0	2.0	Plain pipe
	2.0	12.0	Slotted pipe
BH10	0.0	4.0	Plain pipe
	4.0	14.0	Slotted pipe
BH11	0.0	1.0	Plain pipe
	1.0	33.0	Slotted pipe
BH13	0.0	4.5	Plain pipe
	4.5	19.5	Slotted pipe
G01	0.0	1.0	Plain pipe
	1.0	17.0	Slotted pipe
G02	0.0	1.0	Plain pipe
	1.0	19.5	Slotted pipe
G03	0.0	1.0	Plain pipe
	1.0	19.5	Slotted pipe

Well	Interval m bgl		Pipework
G04	0.0	3.0	Plain pipe
	3.0	20.0	Slotted pipe
G05	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G06	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G07	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G08	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G09	0.0	1.0	Plain pipe
	1.0	14.0	Slotted pipe
G10	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G11	0.0	1.0	Plain pipe
	1.0	15.0	Slotted pipe
G12	0.0	1.0	Plain pipe
	1.0	14.0	Slotted pipe
G13	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G14	0.0	1.0	Plain pipe
	1.0	14.0	Slotted pipe
G15	0.0	1.0	Plain pipe
	1.0	6.0	Slotted pipe
G16	0.0	1.0	Plain pipe
	1.0	6.0	Slotted pipe
G17	0.0	1.0	Plain pipe
	1.0	6.0	Slotted pipe
G18	0.0	1.0	Plain pipe
	1.0	14.0	Slotted pipe
G19	0.0	1.0	Plain pipe
	1.0	14.0	Slotted pipe
G20	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G21	0.0	1.0	Plain pipe
	1.0	17.0	Slotted pipe
G22	0.0	1.0	Plain pipe
	1.0	15.0	Slotted pipe
G23	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe

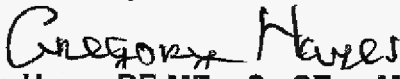
Well	Interval m bgl		Pipework
G24	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
G25	0.0	1.0	Plain pipe
	1.0	20.0	Slotted pipe
LG01	0.0	1.0	Plain pipe
	1.0	5.5	Slotted pipe
LG02	0.0	1.0	Plain pipe
	1.0	9.0	Slotted pipe
LG03	0.0	1.0	Plain pipe
	1.0	18.0	Slotted pipe
LG04	0.0	1.0	Plain pipe
	1.0	15.0	Slotted pipe
LG05	0.0	1.0	Plain pipe
	1.0	14.0	Slotted pipe
LG06	0.0	1.0	Plain pipe
	1.0	6.4	Slotted pipe
LG07	0.0	1.0	Plain pipe
	1.0	17.1	Slotted pipe
LG08	0.0	1.0	Plain pipe
	1.0	8.0	Slotted pipe
LG09	0.0	1.0	Plain pipe
	1.0	17.0	Slotted pipe
LG10	0.0	1.0	Plain pipe
	1.0	18.0	Slotted pipe
LG11	0.0	1.0	Plain pipe
	1.0	13.0	Slotted pipe
LG12	0.0	1.0	Plain pipe
	1.0	12.0	Slotted pipe
LG13	0.0	1.0	Plain pipe
	1.0	9.0	Slotted pipe
LG14	0.0	1.0	Plain pipe
	1.0	12.0	Slotted pipe
LG15	0.0	1.0	Plain pipe
	1.0	8.0	Slotted pipe
LG16	0.0	1.0	Plain pipe
	1.0	3.5	Slotted pipe
LG17	0.0	1.0	Plain pipe
	1.0	4.0	Slotted pipe
LG18	0.0	1.0	Plain pipe
	1.0	10.0	Slotted pipe

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Well	Interval m bgl		Pipework
LG19	0.0	1.0	Plain pipe
	1.0	15.0	Slotted pipe
LG20	0.0	1.0	Plain pipe
	1.0	12.0	Slotted pipe
LG21	0.0	1.0	Plain pipe
	1.0	4.0	Slotted pipe

Should you have any queries in relation to the data collected and presented herein, please do not hesitate to contact our office.

Yours sincerely,
For **Priority Geotechnical**,


Greg Hayes BE MEngSc CEng MIEI
Geotechnical Specialist

No responsibility can be held by PGL for ground conditions between exploratory locations. The exploratory logs provide for ground profiles and configuration of strata relevant to the investigation depths achieved during the fieldworks. Caution shall be taken when extrapolating between such exploratory locations. No liability is accepted for ground conditions extraneous to the exploratory locations.

No account has been taken of potential subsidence or ground movement due to mineral extraction, mining works or karstification below or in proximity to the site, unless specifically addressed.

This report has been prepared for. The information should not be used without their prior written permission. PGL accepts no responsibility or liability for this document being used other than for the purposes for which it was intended.

KEY TO SYMBOLS ON EXPLORATORY HOLE RECORDS

All linear dimensions are in metres or millimetres

DESCRIPTIONS

** Drillers Description
Friable Easily crumbled

SAMPLES

U() Undisturbed 102mm diameter sample, () denotes number of blows to drive sampler
U()F, U()P F- not recovered, P-partially recovered
U38 Undisturbed 38mm diameter sample
P(F), (P) Piston sample - disturbed
B Bulk sample - disturbed
D Jar Sample - disturbed
W Water Sample
CBR California Bearing Ratio mould sample
ES Chemical Sample for Contamination Analysis
SPTLS Standard Penetration Test S lump sample from split sampler

CORE RECOVERY AND ROCK QUALITY

TCR Total Core Recovery (% of Core Run)
SCR Solid Core Recovery (length of core having at least one full diameter as % of core run)
RQD Rock Quality Designation (length of solid core greater than 100mm as % of core run)
Where there is insufficient space for the TCR, SCR and RQD, the results may be found in the remarks column
If Fracture Spacing in mm (Minimum/Average/Maximum) NI - non intact, NR - no recovery
AZCL Assumed Zone of Core Loss
NI Non intact

GROUNDWATER

▽ Groundwater strike
▼ Groundwater level after standing period
Date/Water Date of shift (day/month)/Depth to water at end of previous shift shown above the date and depth to water at beginning of shift given below the date

INSITU TESTING

S Standard Penetration Test - split barrel sampler
C Standard Penetration Test - solid 60° cone
SW Self Weight Penetration
Ivp, HVp (R) In Situ Vane Test, Hand Vane Test (R) demonstrates remoulded strength
K(F), (C), (R), (P) Permeability Test
HP Hand Penetrometer Test

MEASURED PROPERTIES

N Standard Penetration Test - blows required to drive 300mm after seating drive
x/y Denotes x blows for y mm within the Standard Penetration Test
x*/y Denotes x blows for y mm within the seating drive
c_u Undrained Shear Strength (kN/m²)
CBR California Bearing Ratio

ROTARY DRILLING SIZES

Index Letter	Nominal Diameter (mm)	
	Borehole	Core
N	75	54
H	99	76
P	120	92
S	146	113

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Project Name:

assaroe Historic Landfills

Project No.

P15180

Co-ords: 723644E - 718222N

Hole Type

Rotary

Client: RPS Consulting Engineers

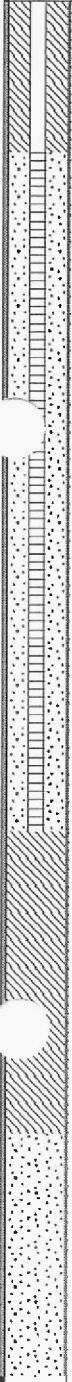
Dates:

21/01/2016

Level: 83.76 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						82.46	1.30	Open hole drilling. Driller described (MADE GROUND) Topsoil and Gravel.	
								Open hole drilling. Driller described (MADE GROUND) Waste.	
						80.76	3.00	Open hole drilling. (MADE GROUND) Driller described wet waste mixed with silty Sand.	
						79.26	4.50	Open hole drilling. (MADE GROUND) Driller described wet waste mixed with Gravel.	
						77.76	6.00	Open hole drilling. Driller describes sandy GRAVEL.	
						75.16	8.60	Open hole drilling. Driller describes sandy CLAY.	
Continued next sheet									
Water		Depth (m)	Type	Results	Casing	Level	Depth		

Groundwater:

Struck 3.00m
10.20m
Rose to -
After -
Sealed -
Comment Refer to detail.

Hole Information:

Hole Depth 16.00m
Hole Diameter -
Casing Diameter 131mm

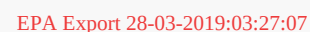
Chiselling:

Depths (m) to
Time (hhmm)
Tool

Remarks: Borehole complete at 16.0m bgl. 50mm dia. standpipe installed, response zone 1m to 5.5m.

Shift Data: Groundwater -
Shift (dd/mm/yyyy) 21/01/2016
Casing depth 16.00m
Remarks End of shift

Equipment & Methods: Delta base 520



Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723692E - 718261N

Hole Type

Cable/Rotary

Client: RPS Consulting Engineers

Dates:

11/02/2016-17/02/2016

Level: 83.19 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						82.19	1.00	(MADE GROUND) Driller described clayey waste.	
								(MADE GROUND) Driller described plastic waste.	1
						80.19	3.00	(MADE GROUND) Driller described plastic and timber.	3
						79.19	4.00	(MADE GROUND) Driller described waste bags and steel.	4
						78.19	5.00	(MADE GROUND) Driller described waste and paper.	5
						77.19	6.00	(MADE GROUND) Driller described waste.	6
						76.19	7.00	(MADE GROUND) Driller described steel and plastic	7
						75.19	8.00	(MADE GROUND) Driller described strips of steel	8
						74.69	8.50	(MADE GROUND) Driller described bits of steel.	
						8.90	74.29	8.90	
								Continued next sheet	

Groundwater:

Struck 7.30m
Rose to -
After -
Sealed -
Comment

Hole Information:

Hole Depth 8.90m
Hole Diameter -
Casing Diameter 200mm
131mm

Chiselling:

Depths (m) 7.80 to 8.00
Time (hhmm) 0100
Tool Chisel
Chisel

Remarks: Cable tool borehole complete at 8.90m bgl. Rotary openhole borehole complete at 12.0m bgl. 50mm standpipe installed response zone 1m to 9m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 11/02/2016 8.50m End of shift
- 15/02/2016 8.90m End of shift
- 17/02/2016 12.00m End shift

Equipment & Methods: Dando 2000
Deltabase 520

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723751E - 718308N

Hole Type

Rotary

Client: RPS Consulting Engineers

Dates:

20/01/2016-21/01/2016

Level: 82.25 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						80.95	1.30	Open hole drilling. (MADE GROUND) Driller describes Topsoil, sand and gravel.	1
								Open hole drilling. (MADE GROUND) Driller describes waste mixed with gravel.	2
									3
						77.75	4.50	Open hole boring. (MADE GROUND) Driller described waste with boulders and or concrete blocks.	5
						76.25	6.00	Open hole drilling. Driller describes Waste. 6.0 to 7.40m bgl. Arisings are wet possibly due to leachate.	6
						74.85	7.40	Open hole drilling. (MADE GROUND) Driller describes Clay. 7.40m bgl to 8.70m bgl Arising are dry.	8
						73.55	8.70	Open hole drilling. (MADE GROUND) Driller describes	
Continued next sheet									

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Groundwater:

Struck	Rose to	After	Sealed	Comment
6.00m	-	-	-	Refer to detail
11.10m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
29.00m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Borehole complete at 29.0m bgl. 50mm dia. standpipe installed, response zone 1m to 18m.

Shift Data:

Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-	20/01/2016	13.59m	End of shift
-	21/01/2016	29.00m	End of shift

Equipment & Methods: Deltabase 520

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723751E - 718308N

Hole Type

Rotary

Client: RPS Consulting Engineers

Dates:

20/01/2016-21/01/2016

Level: 82.25 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Waste.	
						71.15	11.10	Open hole drilling. Driller describes concrete. 11.1 to 11.90m bgl Driller notes large amount of water (leachate) in arisings.	
						70.35	11.90	Open hole drilling. (MADE GROUND) Driller describes waste. 11.90 to 13.50m bgl Waste is slightly wet.	
						68.75	13.50	Open hole drilling. (MADE GROUND) Driller describes waste. 13.5 to 18.20m bgl Waste is dry	
Continued next sheet									
Water		Depth (m)	Type	Results	Casing	Level	Depth		

Groundwater:

Struck	Rose to	After	Sealed	Comment
6.00m	-	-	-	Refer to detail
11.10m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
29.00m	-	131mm

Chiselling:

Depths (m) to	Time (hhmm)	Tool

Remarks: Borehole complete at 29.0m bgl. 50mm dia. standpipe installed, response zone 1m to 18m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 20/01/2016 13.50m End of shift
21/01/2016 29.00m End of shift

Equipment & Methods: Deltbase 520

Project Name:

assaroo Historic Landfills

Project No.

P15180

Co-ords: 723751E - 718308N

Hole Type

Rotary

Client: RPS Consulting Engineers

Dates:

20/01/2016-21/01/2016

Level: 82.25 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						64.05	18.20	Open hole drilling. (MADE GROUND) Driller described waste mixed with gravel.	
						63.25	19.00	Open hole drilling. Driller described GRAVEL.	19
									20
									21
						60.25	22.00	Open hole describes SAND.	22
									23
									24
									25
									26

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Groundwater:

Struck	Rose to	After	Sealed	Comment
6.00m	-	-	-	Refer to detail
11.10m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
29.00m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool

Remarks: Borehole complete at 29.0m bgl. 50mm dia. standpipe installed, response zone 1m to 18m.

Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
	-	20/01/2016	13.50m	End of shift
	-	21/01/2016	29.00m	End of shift

Equipment & Methods: Deltbase 520

Project Name:

assaroo Historic Landfills

Project No.

P15180

Co-ords: 723729E - 718362N

Hole Type

Cable/Rotary

Client: RPS Consulting Engineers

Dates:

10/02/2016-17/02/2016

Level: 81.88 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								(MADE GROUND) Driller described waste with plastic.	
						80.88	1.00	(MADE GROUND) Driller described rubble and waste.	1
						79.88	2.00	(MADE GROUND) Driller described plastic with newspapers.	2
						78.88	3.00	(MADE GROUND) Driller described rubber pipe with plastic.	3
						77.88	4.00	(MADE GROUND) Driller described gravel, waste and plastic.	4
						76.88	5.00	(MADE GROUND) Driller described waste paper.	5
						75.88	6.00	(MADE GROUND) Driller described bags and newspapers.	6
						74.88	7.00	(MADE GROUND) Driller described bags and newspapers.	7
						73.88	8.00	(MADE GROUND) Driller described paper, waste and timber.	8
					8.85	73.03	8.85		
Continued next sheet									

Groundwater:

Struck	Rose to	After	Sealed	Comment
9.70m	-	-	-	See shift data
12.10m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
8.85m	-	200mm
18.00m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
8.70 to 8.85	0100	Chisel

Remarks: Cable tool borehole complete at 8.85m bgl. Rotary open hole borehole complete at 18.0m bgl. 50mm dia. standpipe installed, response zone 1m to 15m.

Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-	-	10/02/0016	8.00m	End of shift
-	-	11/02/0016	8.85m	End of shift
8.40m	-	16/02/0016	13.50m	End shift
8.40m	-	17/02/0016	18.00m	End shift

Equipment & Methods: Dando 2000, Deltabase 520

1:50

Continued next sheet

Shift	Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-			19/01/2016	25.50m	End of shift

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1:50

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Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723787E - 718340N

Hole Type

Rotary

Client: RPS Consulting Engineers

Dates:

15/01/2016-19/01/2016

Level: 80.14 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend	
		Depth (m)	Type	Results						
							Open hole drilling. Driller describes GRAVEL.			
							59.74		20.40	Open hole drilling . Driller describes slightly sandy, slightly gravelly CLAY.
							59.14		21.00	Open hole drilling. Driller describes SAND. From 21.0 to 25.5 arisings are wet.
						57.74	22.40		Open hole drilling. Driller describes sandy GRAVEL.	
25.50	54.64	25.50	End of Borehole at 25.50 m							

Groundwater:

Struck	Rose to	After	Sealed	Comment
-	-	-	-	Refer to detail

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
25.50m	-	131mm

Chiselling:

Depths (m) to	Time (hhmm)	Tool
------------------	-------------	------

Remarks: Borehole complete at 25.50m bgl. 50mm dia. standpipe installed, response zone 1m to 14m.

Shift Data:	Groundwater	Shift (dd/rnm/yyyy)	Casing depth	Remarks
-		19/01/2016	25.50m	End of shift

Equipment & Methods: Deltabase 520

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723716E - 718432N

Hole Type

Rotary

Client: RPS Consulting Engineers

Dates:

20/01/2016

Level: 82.68 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						81.38	1.30	Open hole drilling. (MADE GROUND) Driller describes topsoil with sand and gravel.	1
								Open hole drilling. Driller describes waste.	2
									3
									4
									5
						76.08	6.60	Open hole drilling. (MADE GROUND) Driller describes timbers.	6
						75.28	7.40	Open hole drilling. Driller describes sandy GRAVEL.	7
									8

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Continued next sheet

Groundwater:

Struck	Rose to	After	Sealed	Comment
18.60m	-	-	-	Refer to detail

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
17.50m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Borehole complete at 17.50m bgl. 50mm dia. standpipe installed, response zone 1m to 6.4m.

Shift Data: Groundwater - Shift (dd/mm/yyyy) 20/01/2016 Casing depth 17.50m Remarks Start of shift

Equipment & Methods: Deltabase 520

Project Name: Fassaroe Historic Landfills	Project No. P15180	Co-ords: 723798E - 718405N	Hole Type Cable/ Rotary
Client: RPS Consulting Engineers	Dates: 10/02/2016-15/02/2016	Level: 74.87 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						73.87	1.00	(MADE GROUND) Driller described black clay and waste	1
						72.87	2.00	(MADE GROUND) Driller described black waste with plastic and bags	2
						71.87	3.00	(MADE GROUND) Driller described black waste with steel	3
						70.87	4.00	(MADE GROUND) Driller described waste with timber and bags	4
						69.87	5.00	(MADE GROUND) Driller described steel and plastic	5
						69.87	5.00	(MADE GROUND) Driller described waste plastic and steel ropes	6
						65.87	9.00	(MADE GROUND) Open hole drilling Driller described plastic gravel and timber	7
								Continued next sheet	8

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Groundwater:					Hole Information:			Chiselling:						
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m)	Time (hhmm)	Tool				
9.30m	-	-	-		5.70m	-	200mm	5.60 to 5.70	0100	Chisel				
					17.50m	-	131mm							
Remarks: Cable tool borehole complete at 5.70m bgl. Rotary open hole borehole complete at 17.50m bgl. 50mm dia. standpipe installed, response zone 1m to 17.1m.					Shift Data:									
					Groundwater		Shift (dd/mm/yyyy)	Casing depth	Remarks					
					-		10/02/2016	5.70m	End of shift					
-		12/02/2016	12.00m	End of shift										
-		15/02/2016	17.50m	End of shift										
Equipment & Methods: Dando 2000, Deltabase 520														

Scale
1:50

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Depths (m)	Time (hhmm)	Tool
5.60 to 5.70	0100	Chisel

Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-	-	10/02/2016	5.70m	End of shift
-	-	12/02/2016	12.00m	End of shift
-	-	15/02/2016	17.50m	End of shift

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Project Name: Fassaroe Historic Landfills	Project No. P15180	Co-ords: 723855E - 718377N	Hole Type RO
Client: RPS Consulting Engineers	Dates: 29/01/2016-01/02/2016	Level: 70.77 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						69.27	1.50	(MADE GROUND) Open hole drilling. Driller described plastic, timber and metal.	1
						67.77	3.00	(MADE GROUND) Open hole drilling. Driller described plastic, timber and metal.	2
						67.27	3.50	(MADE GROUND) Open hole drilling. Driller described granite block.	3
						66.27	4.50	(MADE GROUND) Open hole drilling. Driller described plastic, boulders and timber.	4
						64.77	6.00	(MADE GROUND) Open hole drilling. Driller described metal, plastic and timber.	5
						63.27	7.50	(MADE GROUND) Open hole drilling. Driller described metal, plastic and timber.	6
						61.77	9.00	(MADE GROUND) Open hole drilling. Driller described metal, plastic and timber.	7
								Continued next sheet	8

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Groundwater: Struck - Rose to - After - Sealed - Comment - None encountered.	Hole Information: Hole Depth 19.50m Hole Diameter - Casing Diameter 131mm			Chiselling: Depths (m) to Time (hhmm) Tool		
Remarks: Borehole complete at 19.50m bgl, 50mm dia. standpipe installed, response zone 1m to 8m.	Shift Data: Groundwater - Shift (dd/mm/yyyy) 29/01/2016 Casing depth 10.50m Remarks End of shift					
Equipment & Methods: Deltabase 520						



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LG08

Sheet 2 of 3

Project Name: Lissaroe Historic Landfills	Project No. P15180	Co-ords: 723855E - 718377N	Hole Type RO
Client: RPS Consulting Engineers	Dates: 29/01/2016-01/02/2016	Level: 70.77 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						61.07	9.70	Open hole drilling. Driller described gravelly, clay SAND.	
						60.27	10.50	Open hole drilling. Driller described sand GRAVEL.	
						58.77	12.00	Open hole drilling. Driller described SAND.	
						57.27	13.50	Open hole drilling. Driller described sandy GRAVEL.	
						55.77	15.00	Open hole drilling. Driller described SAND.	
						54.27	16.50	Open hole drilling. Driller described SAND.	
						52.77	18.00		
								Continued next sheet	

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Groundwater: Struck Rose to After Sealed Comment - - - -None encountered.					Hole Information: Hole Depth Hole Diameter Casing Diameter 19.50m - 131mm			Chiselling: Depths (m) Time (hhmm) Tool to		
Remarks: Borehole complete at 19.50m bgl. 50mm dia. standpipe installed, response zone 1m to 8m.					Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks -					

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723827E - 718411N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

02/02/2016-03/02/2016

Level: 71.06 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described as Clay Gravel	1
						69.56	1.50	(MADE GROUND) Open hole drilling. Driller described as plastic timber.	2
						68.06	3.00	(MADE GROUND) Open hole drilling. Driller described gravel, timber and plastic.	3
						66.56	4.50	(MADE GROUND) Open hole drilling. Driller described blocks timber and plastic.	4
						65.06	6.00	(MADE GROUND) Open hole drilling. Driller described blocks, timber and plastic.	5
						63.56	7.50	(MADE GROUND) Open hole drilling. Driller described boulders and gravel.	6
						62.06	9.00		7
								Continued next sheet	8

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Groundwater:

Struck - Rose to - After - Sealed - Comment - None encountered.

Hole Information:

Hole Depth 25.50m Hole Diameter - Casing Diameter 131mm

Chiselling:

Depths (m) Time (hhmm) Tool to

Remarks: Borehole complete at 25.50m bgl. 50mm dia. standpipe installed, response zone 1m to 17m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 02/02/2016 16.50m End of shift
- 03/02/2016 25.50m End of shift

Equipment & Methods: Deltabase520



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Borehole No
LG09

Sheet 2 of 3

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723827E - 718411N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

02/02/2016-03/02/2016

Level: 71.06 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								(MADE GROUND) Open hole drilling. Driller described boulders and plastic	
						60.56	10.50	(MADE GROUND) Open hole drilling. Driller described boulders, plastic and timber.	
						59.06	12.00	(MADE GROUND) Open hole drilling. Driller described boulders and plastic	
						57.56	13.50	(MADE GROUND) Open hole drilling. Driller described boulders, plastic and timber.	
						56.06	15.00	(MADE GROUND) Open hole drilling. Driller described boulders and timber.	
						54.46	16.60	(MADE GROUND) Open hole drilling. Driller described plastic boulders.	
						53.26	17.80	Open hole drilling. Driller described sandy GRAVEL.	
						53.06	18.00		
								Continued next sheet	

Groundwater:

Struck	Rose to	After	Sealed	Comment
-	-	-	-	-None encountered.

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
25.50m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Borehole complete at 25.50m bgl. 50mm dia. standpipe installed, response zone 1m to 17m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 02/02/2016 16.50m End of shift
- 03/02/2016 25.50m End of shift

Equipment & Methods: Deltabase520



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Logged By

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Borehole No

LG09

Sheet 3 of 3

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723827E - 718411N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

02/02/2016-03/02/2016

Level: 71.06 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described gravelly SAND.	19
						51.56	19.50	Open hole drilling. Driller described SAND.	20
									21
									22
									23
									24
									25
					25.50	45.56	25.50	End of Borehole at 25.50 m	26

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Groundwater:					Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m)	Time (hhmm)	Tool
-	-	-	-	-None encountered.	25.50m	-	131mm	to		
Remarks: Borehole complete at 25.50m bgl. 50mm dia. standpipe installed, response zone 1m to 17m.					Shift Data: Groundwater - 02/02/2016 16.50m End of shift - 03/02/2016 25.50m End of shift					
Equipment & Methods: Deltabase520										



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Borehole No
LG10

Sheet 1 of 3

Project Name: Fassaroe Historic Landfills	Project No. P15180	Co-ords: 723905E - 718400N	Hole Type Cable/Rotary
Client: RPS Consulting Engineers	Dates: 08/02/2016-11/02/2016	Level: 66.37 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						65.37	1.00	(MADE GROUND) Driller described clayey GRAVEL.	1
						64.37	2.00	(MADE GROUND) Driller described black gravel and timber and bags.	2
						63.37	3.00	(MADE GROUND) Driller described black bags and timber.	3
						62.37	4.00	(MADE GROUND) Driller described black waste and plastic.	4
						61.37	5.00	(MADE GROUND) Driller described bit of clay with waste.	5
						60.37	6.00	(MADE GROUND) Driller described timber with some gravelly clay.	6
						59.37	7.00	(MADE GROUND) Driller described black clay with plastic.	7
						58.37	8.00	(MADE GROUND) Driller described waste with timber.	8
						57.37	9.00	(MADE GROUND) Driller described timber with steel rope.	
								Continued next sheet	

Groundwater: Struck Rose to After Sealed Comment - - - -None encountered.					Hole Information: Hole Depth Hole Diameter Casing Diameter 10.70m - 200mm 21.00m - 131mm			Chiselling: Depths (m) Time (hhmm) Tool 10.60 to 10.70 0100 Chisel			
Remarks: Cable tool borehole complete at 10.7m bgl. Rotary open hole borehole complete at 21.0m bgl. 50mm dia. standpipe installed, response zone 1m to 18m.								Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks - 08/02/2016 4.00m End of shift - 09/02/2016 10.70m End of shift - 11/02/2016 21.00m End shift			
Equipment & Methods: Dando 2000 Deltabase 520											

Project Name: Assaroe Historic Landfills	Project No. P15180	Co-ords: 723905E - 718400N	Hole Type Cable/Rotary
Client: RPS Consulting Engineers	Dates: 08/02/2016-11/02/2016	Level: 66.37 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								(MADE GROUND) Driller described plastic and metal.	
						56.37	10.00	(MADE GROUND) Driller described waste and bits of steel.	10
					10.70	55.67	10.70	(MADE GROUND) Open hole drilling Driller described glass and timber.	11
									12
						52.87	13.50	(MADE GROUND) Open hole drilling Driller described sand and gravel.	14
						51.37	15.00	(MADE GROUND) Open hole drilling Driller described plastic, sand gravel and timber.	15
									16
					17.00				17
						48.37	18.00		
								Continued next sheet	

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Groundwater:				Hole Information:			Chiselling:			
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m)	Time (hhmm)	Tool
-	-	-	-	-None encountered.	10.70m	-	200mm	10.60 to 10.70	0100	Chisel
					21.00m	-	131mm			
Remarks: Cable tool borehole complete at 10.7m bgl. Rotary open hole borehole complete at 21.0m bgl. 50mm dia. standpipe installed, response zone 1m to 18m.					Shift Data:					
					Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks		
					-	08/02/2016	4.00m	End of shift		
					-	09/02/2016	10.70m	End of shift		
					-	11/02/2016	21.00m	End shift		
Equipment & Methods: Dando 2000 Deltabase 520										

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723425E - 718455N

Hole Type

Cable/Rotary

Client: RPS Consulting Engineers

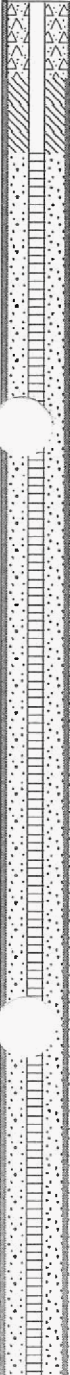
Dates:

18/02/2016-22/02/2016

Level: 95.37 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
					0.50	94.87	0.50	Open hole drilling. (MADE GROUND) Driller described sandy Clay. 0.5m bored cable tool, boring suspended.	
								(MADE GROUND) Open hole drilling. Driller described waste, concrete, tiles, rubber and steel.	
									1
									2
									3
									4
									5
									6
									7
									8

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Continued next sheet

Water	Depth (m)	Type	Results		Casing	Level	Depth			
Groundwater:					Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m)	Time (hhmm)	Tool
-	-	-	-	-None encountered.	0.50m	-	200mm	to		
					17.00m	-	130mm			
Remarks: Cable tool borehole complete at 0.5m bgl. Rotary open-hole borehole complete at 20.0m bgl. 50mm dia. standpipe installed, response zone 1m to 13m.					Shift Data:					
					Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks		
					-	18/02/2016	0.50m	End of shift		
						22/02/2016	17.00m	End of shift		
Equipment & Methods: Deltabase 520										



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Borehole No
LG11

Sheet 2 of 2

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723425E - 718455N

Hole Type

Cable/Rotary

Client: RPS Consulting Engineers

Dates:

18/02/2016-22/02/2016

Level: 95.37 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								(MADE GROUND) Open hole drilling. Driller described waste, concrete, tiles, rubber and steel.	
									10
									11
									12
									13
						81.37	14.00	Open hole drilling. Driller described SAND.	14
									15
									16
					17.00	78.37	17.00	End of Borehole at 17.00 m	17

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Groundwater:

Struck	Rose to	After	Sealed	Comment
-	-	-	-	-None encountered.

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
0.50m	-	200mm
17.00m	-	130mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Cable tool borehole complete at 0.5m bgl. Rotary open-hole borehole complete at 20.0m bgl. 50mm dia. standpipe installed, response zone 1m to 13m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
: 18/02/2016 0.50m End of shift
: 22/02/2016 17.00m End of shift

Equipment & Methods: Deltabase 520

Project Name: Assaroe Historic Landfills	Project No. P15180	Co-ords: 723437E - 718445N	Hole Type Rotary
Client: RPS Consulting Engineers	Dates: 27/01/2015	Level: 95.96 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller describes SAND.	
									19
									20
									21
									22
									23
									24
									25
									26

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Groundwater: Struck Rose to After Sealed Comment - - - - - None encountered	Hole Information: Hole Depth Hole Diameter Casing Diameter 24.00m - 131mm	Chiselling: Depths (m) Time (hhmm) Tool to
--	--	---

Remarks: Borehole complete at 24.0m bgl. 50mm dia. standpipe installed, response zone 1m to 12m.	Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks - 26/01/2016 12.00m End of shift 27/01/2016 24.00m End of shift
Equipment & Methods: Deltabase 520	



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GW

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Borehole No

LG13

Sheet 1 of 3

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723467E - 718464N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

22/02/2016-23/02/2016

Level: 96.05 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						95.75	0.30	Open hole drilling. (MADE GROUND) Driller described sandy Clay.	
								(MADE GROUND) Open hole drilling. Driller described concrete blocks.	
						94.15	1.90	(MADE GROUND) Open hole drilling. Driller described waste.	

1:50

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Continued next sheet

Equipment & Methods: Deltabase 520

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723041E - 718343N

Hole Type

Cable/Rotary

Client: RPS Consulting Engineers

Dates:

15/02/2016-16/02/2016

Level: 93.44 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						92.44	1.00	(MADE GROUND) Driller described waste with plastic	
						91.44	2.00	(MADE GROUND) Driller described waste and plastic	
						90.44	3.00	(MADE GROUND) Driller described waste bags	
						89.44	4.00	(MADE GROUND) Driller described waste bags and rubber	
						88.44	5.00	(MADE GROUND) Driller described bags and rubber	
						87.44	6.00	(MADE GROUND) Driller described plastic and steel	
						6.80	6.80	(MADE GROUND) Driller described waste, difficult drilling slow progress. From 6.80m bgl progress slow due to density of waste.	
								Continued next sheet	

Groundwater:

Struck 23.00m
Rose to -
After -
Sealed -
Comment

Hole Information:

Hole Depth 6.80m
Hole Diameter 23.00m
Casing Diameter 200mm
131mm

Chiselling:

Depths (m) 6.70 to 6.80
Time (hhmm) 0100
Tool Chisel

Remarks: Cable tool borehole complete at 6.8m bgl. Rotary open hole borehole complete at 23.0m bgl. 50mm dia. standpipe installed, response zone 1m to 12m.

Shift Data: Groundwater
Shift (dd/mm/yyyy) Casing depth
15/02/2016 5.00m End of shift
16/02/2016 23.00m End of shift
16/02/2016 - End of shift

Equipment & Methods: Dando 2000, Deltabase 520

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 723041E - 718343N

Hole Type

Cable/Rotary

Client: RPS Consulting Engineers

Dates:

15/02/2016-16/02/2016

Level: 93.44 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling, Driller described very fine, wet blowing SAND.	
									19
									20
									21
									22
									23
									24
									25
									26

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23.00 70.44 23.00

End of Borehole at 23.00 m

Water	Depth (m)	Type	Results	Casing	Level	Depth
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter
23.00m	-	-	-	-	6.80m	290mm
					23.00m	131mm

Groundwater:				Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Depths (m)	Time (hhmm)	Tool
23.00m	-	-	-	-	6.80m	-	6.70 to 6.80	0100	Chisel
					23.00m	131mm			

Remarks:				Shift Data:			
Cable tool borehole complete at 6.8m bgl. Rotary open hole borehole complete at 23.0m bgl. 50mm dia. standpipe installed, response zone 1m to 12m.				Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
				-	15/02/2016	5.00m	End of shift
				-	16/02/2016	23.00m	End shift
				-	16/02/2016	-	End shift

Equipment & Methods:			
Dando 2000, Deltabase 520			

Project Name: Fassaroe Historic Landfills	Project No. P15180	Co-ords: 722727E - 718288N	Hole Type Cable/Rota.
Client: RPS Consulting Engineers	Dates: 17/02/2016-19/02/2016	Level: 103.97 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								(MADE GROUND) Driller described waste and clay	
						102.97	1.00	(MADE GROUND) Driller described waste and some concrete	1
						101.97	2.00	(MADE GROUND) Driller described waste with plastic	2
						100.97	3.00	(MADE GROUND) Driller described waste and timber	3
						99.97	4.00	(MADE GROUND) Driller described plastic bits	4
						98.97	5.00	(MADE GROUND) Driller described metal	5
						98.47	5.50	(MADE GROUND) Driller described waste.	6
									7
									8
						94.97	9.00		
								Continued next sheet	

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Groundwater: Struck Rose to After Sealed Comment - - - -None encountered.					Hole Information: Hole Depth Hole Diameter Casing Diameter 5.50m - 200mm 20.00m - 131mm			Chiselling: Depths (m) Time (hhmm) Tool 1.20 to 2.00 0020 Chisel 5.40 5.50 0100 Chisel		
Remarks: Cable tool borehole complete at 5.5m bgl. Rotary open hole borehole complete at 20.0m bgl. 50mm dia. standpipe installed, response zone 1m to 8m.					Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks - 17/02/2016 5.50m End of shift - 19/02/2016 20.00m End shift.					
Equipment & Methods: Dando 2000, Deltabase 520										

1:50

90,77 13,20

Open hole drill
GRAVEL

Continued next sheet

Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-		17/02/2016	5.50m	End of shift
-		19/02/2016	20.00m	End shift.

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Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 722748E - 718100N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

04/02/2016-05/02/2016

Level: 99.52 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						98.32	1.20	Open hole drilling. Driller described sandy CLAY	
								(MADE GROUND) Open hole drilling. Driller described a wet black silty material mixed with waste. Very bad smell.	
						95.02	7.50	Open hole drilling. Driller described dry black SAND.	
						93.52	6.00	Open hole drilling. Driller described SAND. Black but turns brown at 7.5m bgl	
								Continued next sheet	

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Groundwater:

Struck	Rose to	After	Sealed	Comment
1.20m	-	-	-	perched.
11.20m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
16.00m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Borehole completed at 16.0m bgl. 50mm dia. standpipe installed, response zone 1m to 3.5m.

Shift Data:

Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-	04/02/2016	6.00m	End of shift
-	05/02/2016	16.00m	End of shift

Equipment & Methods: Deltabase520

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 722707E - 718059N

Hole Type

Cable

Client: RPS Consulting Engineers

Dates:

18/02/2016

Level: 100.51 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						99.51	1.00	(MADE GROUND) Driller described waste bags.	
						98.51	2.00	(MADE GROUND) Driller described waste and gravel.	1
						97.51	3.00	(MADE GROUND) Driller described waste.	2
						96.51	4.00	(MADE GROUND) Driller described rubber.	3
						95.51	5.00	(MADE GROUND) Driller described waste.	4
						95.01	5.50	Driller described Natural Ground.	5
								End of Borehole at 5.50 m	6
									7
									8

Groundwater:

Struck - Rose to - After - Sealed - Comment - None encountered.

Hole Information:

Hole Depth 5.50m Hole Diameter - Casing Diameter 200mm

Chiselling:

Depths (m) 5.40 to 5.50 Time (hhmm) 0100 Tool Chisel

Remarks: Borehole complete at 5.0m bgl. 50mm diameter standpipe installed response zone 1.0m to 4.0m.

Shift Data: Groundwater - Shift (dd/mm/yyyy) 18/02/2016 Casing depth 5.50m Remarks End of shift

Equipment & Methods: Dando 2000



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Borehole No
LG18

Sheet 1 of 3

Project Name: Fassaroe Historic Landfills	Project No. P15180	Co-ords: 723040E - 718381N	Hole Type RO
Client: RPS Consulting Engineers	Dates: 15/02/2016-16/02/2016	Level: 92.42 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						91.62	0.80	Open hole drilling. (MADE GROUND) Driller described sandy Clay. (MADE GROUND) Open hole drilling. Driller described waste, concrete, steel, tyres and bricks.	1
									2
									3
									4
									5
									6
									7
									8
								Continued next sheet	

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Groundwater:					Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m) to	Time (hhmm)	Tool
22.00m	-	-	-		22.00m	-	130mm			

Remarks: Borehole complete at 22.0m bgl. 50mm dia. standpipe installed, response zone 1m to 10m.	Shift Data:
	Groundwater :- Shift (dd/mm/yyyy) 15/02/2016 16/02/2016 Casing depth 9.60m 22.00m Remarks End of shift End of shift
Equipment & Methods: Deltabase 520	

Project Name: ssaroe Historic Landfills	Project No. P15180	Co-ords: 723040E - 718381N	Hole Type RO
Client: RPS Consulting Engineers	Dates: 15/02/2016-16/02/2016	Level: 92.42 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						82.82	9.60	(MADE GROUND) Open hole drilling. Driller described waste, concrete, steel, tyres and bricks.	
								(MADE GROUND) Open hole drilling. Driller described waste. From 9.60m bgl Driller described waste as having strong pungent odour.	10
						81.42	11.00	Open hole drilling. Driller described sandy GRAVEL.	11
						80.32	12.10	Open hole drilling. Driller described wet, fine silty SAND.	12
									13
									14
									15
									16
									17

Continued next sheet

Groundwater:					Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m)	Time (hhmm)	Tool
22.00m	-	-	-		22.00m	-	130mm	to		

Remarks: Borehole complete at 22.0m bgl. 50mm dia. standpipe installed, response zone 1m to 10m.	Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
		-	15/02/2016	9.60m	End of shift
		-	16/02/2016	22.00m	End of shift

Equipment & Methods: Deltabase 520



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Borehole No

LG18

Sheet 3 of 3

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723040E - 718381N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

15/02/2016-16/02/2016

Level: 92.42 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described wet, fine silty SAND.	
									19
									20
									21
									22
									23
									24
									25
									26

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End of Borehole at 22.00 m

Groundwater:

Struck	Rose to	After	Sealed	Comment
22.00m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
22.00m	-	130mm

Chiselling:

Depths (m) to	Time (hhmm)	Tool

Remarks: Borehole complete at 22.0m bgl. 50mm dia. standpipe installed, response zone 1m to 10m.

Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
	-	15/02/2016	9.60m	End of shift
	-	16/02/2016	22.00m	End of shift

Equipment & Methods: Deltabase 520

Project Name:

ssaroe Historic Landfills

Project No.

P15180

Co-ords: 722742E - 718394N

Hole Type

Cable/Rotary

Client: RPS Consulting Engineers

Dates:

16/02/2016-18/02/2016

Level: 103.90 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Refer to LG19 for overburden details.	
					6.80	97.10	6.80	(MADE GROUND) Open hole drilling. Driller described waste. From 6.80m to 16.0m bgl driller states arisings are wet.	

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Continued next sheet

Groundwater:

Struck	Rose to	After	Sealed	Comment
6.80m	-	-	-	
26.00m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
6.80m	-	200mm
26.00m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks:

Cable tool borehole complete at 6.8m bgl. Rotary open hole borehole complete at 26.0m bgl. 50mm dia. standpipe installed, response zone 1m to 15m.

Shift Data:

Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-	16/02/2018	8.60m	End shift
-	18/02/2018	26.00m	End of shift

Equipment & Methods:

Dando 2000, Deltabase 520



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Borehole No
LG19

Sheet 2 of 3

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 722742E - 718394N

Hole Type

Cable/Rota.

Client: RPS Consulting Engineers

Dates:

16/02/2016-18/02/2016

Level: 103.90 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								(MADE GROUND) Open hole drilling. Driller described waste.	
									10
									11
									12
									13
									14
									15
						87.90	16.00	Open hole drilling. Driller described GRAVEL. From 16.30 to 17.20m bgl driller states arsisings are wet	16
						86.70	17.20	Open hole drilling. Driller described sandy GRAVEL.	17
								Continued next sheet	

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Groundwater:

Struck	Rose to	After	Sealed	Comment
6.80m	-	-	-	
26.00m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
6.80m	-	200mm
26.00m	-	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Cable tool borehole complete at 6.8m bgl. Rotary open hole borehole complete at 26.0m bgl. 50mm dia. standpipe installed, response zone 1m to 15m.

Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
	-	16/02/2018	6.60m	End shift
	-	18/02/2018	26.00m	End of shift

Equipment & Methods: Dando 2000, Deltabase 520

Project Name: Assaroe Historic Landfills	Project No. P15180	Co-ords: 722742E - 718394N	Hole Type Cable/Rotary
Client: RPS Consulting Engineers	Dates: 16/02/2016-18/02/2016	Level: 103.90 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described sandy GRAVEL.	
									19
									20
									21
									22
									23
									24
									25
									26
					26.00	77.90	26.00	End of Borehole at 26.00 m	

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Water	Depth (m)	Type	Results		Casing	Level	Depth			
Groundwater:					Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m)	Time (hhmm)	Tool
6.80m	-	-	-		6.80m	-	200mm	to		
26.00m	-	-	-		26.00m	-	131mm			
Remarks: Cable tool borehole complete at 6.8m bgl. Rotary open hole borehole complete at 26.0m bgl. 50mm dia. standpipe installed, response zone 1m to 15m.					Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks					
					- 16/02/2018 8.60m End shift					
					18/02/2018 26.00m End of shift					
Equipment & Methods: Dando 2000, Dellabase 520										



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Borehole No
LG20

Sheet 3 of 3

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 722761E - 718334N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

10/02/2016

Level: 103.82 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described sandy, clay GRAVEL.	
						83.22	20.60	Open hole drilling. Driller described wet GRAVEL. From 20.60 to 23.0m bgl arisings are wet.	
						23.00	23.00	End of Borehole at 23.00 m	

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Groundwater:

Struck Rose to After Sealed Comment

Hole Information:

Hole Depth Hole Diameter Casing Diameter
23.00m - 131mm

Chiselling:

Depths (m) Time (hhmm) Tool
to

Remarks: Borehole complete at 23.0m bgl. 50mm dia. standpipe installed, response zone 1m to 12m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 10/02/2016 23.00m End of shift

Equipment & Methods: Deltabase 520

Scale
1:50

	96.58	4.00	(MADE GROUP)
	95.38	5.20	(MADE GROUP)
6.70	94.68	5.70	

Equipment & Methods: Dando 2000



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Borehole No
BH01

Sheet 1 of 3

Project Name: Fassaroe Historic Landfills	Project No. P15180	Co-ords: 723752E - 718464N	Hole Type: RO
Client: RPS Consulting Engineers	Dates: 04/02/2016	Level: 79.22 mOD	Scale: 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						77.72	1.50	Open hole drilling. Driller described clayey Gravel.	1
								Open hole drilling. Driller described clayey SAND.	2
						76.22	3.00	Open hole drilling. Driller described CLAY with boulder content.	3
									4
									5
						73.22	6.00	Open hole drilling. Driller described clayey SAND with boulder content.	6
									7
									8
								Continued next sheet	

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Groundwater: Struck Rose to After Scaled Comment 15.00m - - -					Hole Information: Hole Depth Hole Diameter Casing Diameter 21.00m 150 131mm			Chiselling: Depths (m) Time (hhmm) Tool to		
Remarks: Borehole complete at 25.50m bgl. 50mm diameter standpipe installed response zone 5m to 21m.								Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks -		

RO

Scale
1:50

	65.72	13.50	Open hole drilled in boulder containing
	64.22	15.00	Open hole drilled in boulder containing

Continued next sheet

Remarks: Borehole complete at 25.50m bgl. 50mm diameter standpipe installed response zone 5m to 21m.	Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
		-	04/02/2016	21.00m	End of shift
Equipment & Methods: Deltabase 520					

Project Name: Assaroe Historic Landfills	Project No. P15180	Co-ords: 723834E - 718313N	Hole Type RO
Client: RPS Consulting Engineers	Dates: 04/02/2016	Level: 78.65 mOD	Scale 1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						77.15	1.50	Open hole drilling. Driller described CLAY.	1
						75.65	3.00	Open hole drilling. Driller described CLAY with boulder content.	2
						74.15	4.50	Open hole drilling. Driller described clayey, sandy GRAVEL.	3
						71.15	7.50	Open hole drilling. Driller described SAND.	4
								Open hole drilling. Driller described sandy GRAVEL.	5
									6
									7
									8

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Continued next sheet

Groundwater: Struck Rose to After Sealed Comment	Hole Information: Hole Depth Hole Diameter Casing Diameter 19.50m 150 131mm	Chiselling: Depths (m) Time (hhmm) Tool to
Remarks: Borehole complete at 19.50m bgl. 50mm dia. standpipe installed response zone 4.5m - 19.5m.	Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks - 04/02/2016 19.50m End of shift	
Equipment & Methods: Deltabase 520		

Project Name:

ssaroe Historic Landfills

Project No.

P15180

Co-ords: 723834E - 718313N

Hole Type

RO

Client: RPS Consulting Engineers

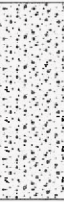
Dates:

04/02/2016

Level: 78.65 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller describes sandy GRAVEL.	
					19.50	59.15	19.50	End of Borehole at 19.50 m	
									19
									20
									21
									22
									23
									24
									25
									26

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Groundwater:					Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m)	Time (hhmm)	Tool
					19.50m	150	131mm	to		

Remarks: Borehole complete at 19.50m bgl. 50mm dia. standpipe installed response zone 4.5m - 19.5m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 04/02/2016 19.50m End of shift

Equipment & Methods: Deltabase 520



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Borehole No
BH04

Sheet 1 of 3

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723659E - 718160N

Hole Type:

RO

Client: RPS Consulting Engineers

Dates:

17/02/2016

Level: 84.41 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
						82.91	1.50	Open hole drilling. Driller described clayey GRAVEL	1
								Open hole drilling. Driller described gravelly CLAY	2
						81.41	3.00	Open hole drilling. Driller described clayey, gravel SAND.	3
									4
						79.91	4.50	Open hole drilling. Driller described sandy GRAVEL	5
									6
									7
									8

Continued next sheet

Groundwater:

Struck	Rose to	After	Sealed	Comment
18.70m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
25.40m	150	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Borehole complete at 25.50m bgl. 50mm dia. standpipe installed response zone 13m - 25.5m.

Shift Data: Groundwater - Shift (dd/mm/yyyy) 17/02/2016 Casing depth 25.50m Remarks End of shift

Equipment & Methods: Dellabase 520

Scale
1:50

Continued next sheetEPA Export 28-03-2019:03:27:09

Rotary

Scale
1:50

[illegible]

Continued next sheet

Depths (m) to	Time (hhmm)	Tool
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Shift Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-		27/01/2016	24.00m	End of shift
-		28/01/2016	35.00m	End of shift

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Borehole No
BH05

Sheet 2 of 4

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723382E - 718381N

Hole Type

Rotary

Client: RPS Consulting Engineers

Dates:

27/01/2016

Level: 96.06 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller describes GRAVEL.	
									10
									11
									12
									13
						82.36	13.70	Open hole drilling. Driller describes SAND.	
									14
									15
									16
						78.56	17.50	Open hole drilling. Driller describes SAND.	
									17
								Continued next sheet	

Groundwater:

Struck 24.00m
Rose to -
After -
Sealed -
Comment Refer to detail

Hole Information:

Hole Depth 35.00m
Hole Diameter 150
Casing Diameter 131mm

Chiselling:

Depths (m) to
Time (hhmm)
Tool

Remarks: Borehole complete at 35.0m bgl. 50mm dia. standpipe installed response zone 19m - 29m.

Shift Data: Groundwater
- 27/01/2016 24.00m End of shift
- 28/01/2016 35.00m End of shift

Equipment & Methods: Deltabase 520

Project Name:

assaroe Historic Landfills

Project No.

P15180

Co-ords: 723382E - 718381N

Hole Type

Rotary

Client: RPS Consulting Engineers

Dates:

27/01/2016

Level: 96.06 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller describes SAND.	
									19
									20
									21
									22
									23
									24
									25
									26

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From 24.0m bgl blowing sands.

From 24.0m to 35.0mbgl arisings are wet.

Continued next sheet

Water	Depth (m)	Type	Results	Casing	Level	Depth	Groundwater Data Sheet		
Groundwater: Struck Rose to After Sealed Comment 24.00m - - - Refer to detail				Hole Information: Hole Depth Hole Diameter Casing Diameter 35.00m 150 131mm			Chiselling: Depths (m) Time (hhmm) Tool to		
Remarks: Borehole complete at 35.0m bgl. 50mm dia. standpipe installed response zone 19m - 29m.							Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks - 27/01/2016 24.00m End of shift - 28/01/2016 35.00m End of shift		
Equipment & Methods: Deltabase 520									



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Borehole No

BH06

Sheet 2 of 2

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 723028E - 718310N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

17/02/2016

Level: 95.27 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described slightly wet, silty, sandy GRAVEL	
									10
									11
									12
									13
					14.00	91.27	14.00	End of Borehole at 14.00 m	14
									15
									16
									17

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Groundwater:

Struck	Rose to	After	Sealed	Comment
6.10m	-	-	-	

Hole Information:

Hole Depth	Hole Diameter	Casing Diameter
14.00m	150	131mm

Chiselling:

Depths (m)	Time (hhmm)	Tool
to		

Remarks: Borehole complete at 14.0m bgl. 50mm dia. standpipe installed response zone 2m - 14m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 17/02/2016 14.00m End of shift

Equipment & Methods: Deltabase 520



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Borehole No
BH07

Sheet 1 of 3

Project Name:

Assaroe Historic Landfills

Project No.

P15180

Co-ords: 722642E - 718220N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

09/02/2016

Level: 106.11 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described sandy, clayey GRAVEL.	
						102.01	4.10	Open hole drilling. Driller described GRAVEL.	
						100.11	6.00	Open hole drilling. Driller described sandy, clayey GRAVEL.	
								Continued next sheet	

Groundwater:

Struck Rose to After Sealed Comment

Hole Information:

Hole Depth Hole Diameter Casing Diameter
21.00m 150 131mm

Chiselling:

Depths (m) Time (hhmm) Tool
to

Remarks: Borehole complete at 21.0m bgl. 50mm dia. standpipe installed response zone 11m - 21m.

Shift Data: Groundwater Shift (dd/mm/yyyy) Casing depth Remarks
- 09/02/2016 21.00m End of shift

Equipment & Methods: Deltabase 520

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 722642E - 718220N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

09/02/2016

Level: 106.11 mOD

Scale

1:50

[illegible]

Continued next sheet

Groundwater:

Struck	Rose to	After	Sealed	Comment
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[illegible]

Hole Depth	Hole Diameter	Casing Diameter
21.00m	150	131mm

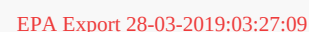
Chiselling:

Depths (m) to	Time (hhmm)	Tool
------------------	-------------	------

Remarks: Borehole complete at 21.0m bgl. 50mm dia. standpipe installed response zone 11m - 21m.

Shift	Data:	Groundwater	Shift (dd/mm/yyyy)	Casing depth	Remarks
-			09/02/2016	21.00m	End of shift

Equipment & Methods: Deltabase 520



Project Name:

assaroo Historic Landfills

Project No.

P15180

Co-ords: 722753E - 718130N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

09/02/2016

Level: 98.80 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing / Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described sandy GRAVEL	
									10
									11
									12
									13
					13.50	85.30	13.50	End of Borehole at 13.50 m	
									14
									15
									16
									17

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Groundwater:

Struck 13.50m
Rose to 0.00m
After -
Sealed -
Comment

Hole Information:

Hole Depth 13.50m
Hole Diameter 150
Casing Diameter 131mm

Chiselling:

Depths (m) 9.00m
Time (hhmm) 13.50m
Tool

Remarks: Borehole complete at 13.50m bgl. 50mm dia. standpipe installed response zone 3.5m - 13.5m.

Shift Data: Groundwater
Shift (dd/mm/yyyy) 09/02/2016
Casing depth 9.00m
Remarks End of shift

Equipment & Methods: Deltabase520



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Logged By

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Borehole No

BH09

Sheet 1 of 2

Project Name:

Fassaroe Historic Landfills

Project No.

P15180

Co-ords: 722746E - 718179N

Hole Type

RO

Client: RPS Consulting Engineers

Dates:

09/02/2016

Level: 97.97 mOD

Scale

1:50

Well / Backfill	Water Strikes	Samples & In Situ Testing			Casing Flush	Level (m AOD)	Depth (m)	Stratum Description	Legend
		Depth (m)	Type	Results					
								Open hole drilling. Driller described sandy, clayey GRAVEL	
						94.27	3.70	Open hole drilling. Driller described gravelly SAND	
						91.97	6.00	Open hole drilling. Driller described sandy GRAVEL	
								Continued next sheet	

Groundwater:					Hole Information:			Chiselling:		
Struck	Rose to	After	Sealed	Comment	Hole Depth	Hole Diameter	Casing Diameter	Depths (m) to	Time (hhmm)	Tool
6.00m	-	-	-		12.00m	150	131mm			

Remarks: Borehole complete at 12.0m bgl. 50mm dia. standpipe installed response zone 2m - 12m.

Shift Data: Groundwater - Shift (dd/mm/yyyy) 09/02/2016 Casing depth 12.00m Remarks End of shift

Equipment & Methods: Deltabase 520