

Trial Pit Log

TerraConsult

Personnel: Logged by: Date logged: Checked by:		Equipment & methods: Method: Mechanically excavated Plant: JCB Shoring:		Dimensions: Width: Length: Orientation: Bearing =		Coordinates & level: Grid: Easting: 329021.48m Northing: 346332.62m Level:		Dates: Start: End:	
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Backfill/ Instal'n	Water- strike	Legend	Level & Depth (Thickness)	Stratum Description	Samples & In Situ Testing		
					Depth	Type & No	Results
			(0.40)	MADE GROUND: Macadam-0.07m over Grey brown fine-coarse subangular GRAVEL	0.50	ES1	
			0.40 (0.20)	MADE GROUND: Black, grey fine-coarse gravel sized ASH with broken bricks, whole bricks, gravel and rare broken glass			
			0.60 (0.15)	MADE GROUND: Black purple fine-coarse gravel sized ASH with some gravel, broken slate and occasional broken brick			
			0.75 (0.55)	MADE GROUND: Purple, brown fine-coarse gravel sized ASH with some gravel, slate and mudstone cobbles			
			1.30 (0.40)	MADE GROUND: Light brown fine-coarse gravel sized ASH, mortar, coarse gravel and cobbles of sandstone and mudstone, broken bricks and whole bricks			
			1.70 (0.40)	MADE GROUND: Light brown coarse GRAVEL and cobbles of sandstone, clay, mortar and sand			
			2.10	Trial pit terminated at 2.10m			
					Depth	Type & No	Results
Groundwater entries: Struck: Rose to: Inflow rate:				Depth related remarks: From - to: Remarks:		General remarks: Weather: Stability: Remarks: Termination:	
 Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in meters. Log issue: Scale: 1:25				Project: Project No: SRL-164 Client:		Exploratory position reference: TC05 Sheet 1 of 1	

RECORD PHOTOGRAPHS



TerraConsult

Personnel:	Equipment & methods:	Dimensions:	Coordinates & level:	Dates:
Logged by:	Method: Mechanically excavated	Width:	Grid:	Start:
Date logged:		Length:	Easting: 328995.97m	End:
Checked by:	Plant: JCB	Orientation:	Northing: 346408.73m	
	Shoring:	Bearing =	Level:	

Backfill/ Instal'n	Water- strike	Legend	Level & Depth (Thickness)	Stratum Description	Samples & In Situ Testing		
					Depth	Type & No	Results
			(0.40)	MADE GROUND: Macadam-0.07m over Grey subangular fine-coarse GRAVEL	0.50 0.70 	ES1	24
			0.40 (0.20)	MADE GROUND: Soft dark brown, black gravelly CLAY. Gravel is fine to medium coal, broken bricks and whole bricks			
			0.60 (0.30)	Soft brown slightly silty CLAY with some organic material, earthy aroma			
			0.90 (0.20)	Soft light brown grey slightly gravelly CLAY. Gravel is fine to coarse, subangular			
			1.10 (0.50)	Soft to firm light brown grey slightly gravelly CLAY with occasional pockets of medium sand. Gravel is fine-coarse, subangular			
			1.60 (0.40)	Firm light brown, grey slightly sandy gravelly CLAY with occasional cobbles. Gravel is fine-coarse, subangular			
			2.00 (0.50)	Firm to stiff grey light brown slightly gravelly CLAY with occasional cobbles. Gravel is fine-coarse, subangular			
			2.50	Trial pit terminated at 2.50m			1.30 1.30
					Depth	Type & No	Results
Groundwater entries: Struck: Rose to: Inflow rate:				Depth related remarks: From - to: Remarks:		General remarks: Weather: Stability: Remarks: Termination:	
 Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in meters. Log issue: Scale: 1:25				Project: Project No: SRL-164 Client:		Exploratory position reference: TP01	
						Sheet 1 of 1	

RECORD PHOTOGRAPHS



TerraConsult

Personnel:	Equipment & methods:	Dimensions:	Coordinates & level:	Dates:
Logged by:	Method: Mechanically excavated	Width:	Grid:	Start:
Date logged:		Length:	Easting: 329011.95m	End:
Checked by:	Plant: JCB	Orientation:	Northing: 346391.00m	
	Shoring:	Bearing =	Level:	

TP02

RECORD PHOTOGRAPHS



Trial Pit Log

TerraConsult

Personnel: Logged by: Date logged: Checked by:		Equipment & methods: Method: Mechanically excavated Plant: JCB Shoring:		Dimensions: Width: Length: Orientation: Bearing =	Coordinates & level: Grid: Easting: 328990.98m Northing: 346391.85m Level:	Dates: Start: End:
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Backfill/ Instal'n	Water- strike	Legend	Level & Depth (Thickness)	Stratum Description	Samples & In Situ Testing		
					Depth	Type & No	Results
			(0.20)	MADE GROUND: Reinforced CONCRETE with layer of visqueen			
			0.20 (0.30)	MADE GROUND: Light brown fine to coarse subangular GRAVEL			
			0.50 (0.10)	MADE GROUND: Black, orange, grey gravelly CLAY. Gravel is fine-coarse, ash and mudstone, subangular	0.55	ES1	
			0.60 (0.15)	MADE GROUND: Firm to stiff grey gravelly CLAY. Gravel is broken brick and fine coal			
			0.75 (0.55)	MADE GROUND: Black, grey clayey mudstone subangular GRAVEL with occasional medium to coarse coal	1.00	ES2	
			1.30 (0.30)	Soft greenish brown silty CLAY with some organic material			
			1.60 (0.25)	Soft light brown grey silty slightly gravelly CLAY. Gravel is fine to medium, subangular	1.70 1.70	D1	28
			1.85 (0.15)	Soft to firm light brown grey silty slightly gravelly CLAY. Gravel is fine to medium, subangular	1.90		70
			2.00 (0.20)	Firm light brown grey silty slightly gravelly CLAY. Gravel is fine to coarse, subangular, subrounded			
			2.20 (0.40)	Firm to stiff light brown grey slightly silty, slightly gravelly CLAY with carbonaceous material	2.40	D2	
			2.60	----- Trial pit terminated at 2.60m			
					Depth	Type & No	Results
Groundwater entries: Struck: Rose to: Inflow rate:				Depth related remarks: From - to: Remarks:		General remarks: Weather: Stability: Remarks: Termination:	
 Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in meters. Log issue: Scale: 1:25				Project: Project No: SRL-164 Client:		Exploratory position reference: TP03 Sheet 1 of 1	

RECORD PHOTOGRAPHS



TerraConsult

Personnel:	Equipment & methods:	Dimensions:	Coordinates & level:	Dates:
Logged by:	Method: Mechanically excavated	Width:	Grid:	Start:
Date logged:		Length:	Easting: 928971.39m	End:
Checked by:	Plant: JCB	Orientation:	Northing: 346362.67m	
	Shoring:	Bearing =	Level:	

Backfill/ Instal'n	Water- strike	Legend	Level & Depth (Thickness)	Stratum Description	Samples & In Situ Testing		
					Depth	Type & No	Results
			(0.30)	MADE GROUND: Dark grey silty clayey mudstone subangular flat GRAVEL	0.30	ES1	
			0.30 (1.10)	MADE GROUND: Black, purple mudstone subangular GRAVEL and include ash, some broken brick, fine to medium coal, carbonaceous material with rootlets to 5mm			
					1.00	ES2	
			1.40 (0.60)	MADE GROUND: Grey very gravelly CLAY with cobbles of mudstone and lenses of black ashes and fine to medium coal. Gravel is fine-coarse, subangular flat	1.75	ES3	
			2.00 (0.50)	MADE GROUND: Grey very gravelly CLAY with cobbles of mudstone and lenses of black ashes and fine to medium coal. Gravel is fine-coarse, subangular flat			
			2.50	Trial pit terminated at 2.50m			
					Depth	Type & No	Results
Groundwater entries: Struck: Rose to: Inflow rate:				Depth related remarks: From - to: Remarks:		General remarks: Weather: Stability: Remarks: Termination:	
 Notes: For explanation of symbols and abbreviations see Key Sheet. All depths and reduced levels are in meters.				Project: Project No: SRL-164 Client:		Exploratory position reference: TP04	
Log issue: Scale: 1:25						Sheet 1 of 1	

RECORD PHOTOGRAPHS



APPENDIX 2.4 CBR test results



Client: Datrys

Job No.: SRL164

Site Name: Bonc Wen

SRL

Field Test Result - CBR Value by Clegg Hammer

Location Number	Test No.	Sample Depth Top m	Description	IV Readings					CIV	Correlated CBR Value % CBR=(0.24(IV)+1)²
				Drop No. 1	Drop No. 2	Drop No. 3	Drop No. 4	Drop No. 5		
TC01	1	0.60	MADEGROUND (Ash, gravel,clay and brick)	13	12	15	16	15	16	23
TC01	2	0.90	Stiff grey CLAY with fine-coarse sub-angular gravel	11	12	12	13	13	13	17
TC02	1	0.70	MADEGROUND (Ash, gravel,clay and brick)	5	6	6	6	7	6	6
TC02	2	1.00	MADEGROUND (Ash, gravel,clay and brick)	10	11	12	12	12	12	15
TC03	1	0.60	MADEGROUND (Ash, gravel,clay and brick)	7	9	10	10	11	11	13
TC03	2	0.90	MADEGROUND (Ash, gravel,clay and brick)	4	5	5	6	6	6	6
TC04	1		MADEGROUND (Ash, and large bricks, slate and coarse gravel)	Material Unsuitable For Testing						
TC04	2	0.90	MADEGROUND (Ash, gravel,clay and brick)	8	10	11	12	12	12	15
TC05	1	0.40	MADEGROUND (Ash, gravel,clay and brick)	7	10	12	13	15	13	17
TC05	2	0.60	MADEGROUND (Ash, gravel,clay and brick)	10	13	14	15	15	15	21
TC05	3	0.90	MADEGROUND (Ash, gravel,clay and brick)	12	13	13	13	13	13	17

APPENDIX 2.5 BRE 365 Soakaway results





Strata Renewables Limited

Ground Investigation
Laboratory Testing
Plant and Rig Maintenance

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Date: 3rd March 2015
Our Reference: CW164

Datrys
Yr Aelwyd
3-5 Church Street
Caernarfon
LL55 1SW

For the attention of Niel Williams

Dear Sirs

Re: Bonc Wen, Rhosllannerchrugog

3 No. soakaway tests were attempted at the above site and the results are set out below:-

TP4 was dry before the start of the soakaway tests. Three tests were carried out in TP4. During the first test loose made ground above 1.00 metre depth fell into the pit. This was cleared out before the 2nd filling.

Stratum Encountered

0.30 – 1.40m Loose black, purple mudstone gravel, ashes, some broken brick, fine to medium coal, carbonaceous material and rootlets to 5mm, (gravel sub angular) Made Ground.

1.40 – 2.00m Loose to Medium Dense grey very gravelly clay with some coarse gravel and cobbles of mudstone, fine to medium coal and lenses of black ashes, (gravel sub angular flat) Made Ground.

2.00 – 2.50m Dense grey very gravelly clay with some coarse gravel and cobble of mudstone, fine to medium coal and lenses of black ashes, (gravel sub angular flat) Made Ground.

TP4 Test No	Pit Length (m)	Pit Width (m)	75% Depth	25% Depth	Empty Depth (m)	Water at Start of test (m)	75% Time	25% Time	Soil infiltration rate, f = m/sec
Test 1	3.00	0.70	1.73	2.18	2.40	1.50	1.2min	14min	2.28×10^{-4}
Test 2	3.00	0.70	2.06	2.29	2.40	1.94	70min	200min	1.62×10^{-5}
Test 3	3.00	0.70	1.86	2.22	2.40	1.68	15min	225min	1.27×10^{-5}

Soakaway Test TP1 and TP2 both failed as the water level did not measurably drop over 3 hours.
See trial pit logs for soil descriptions.

APPENDIX 2.6 Gas Monitoring results



Client: Datrys
Job No.: SRL164

Site Name: Bonc Wen, Rhosllanecrugog, Wrexham



Gas Monitoring Readings:

Well Number	Date / Time	CH4 %	CO2 %	O2 %	Hexane %	% of Lower Explosive Limit	Peak CH4 %	Peak CO2 %	Min O2 %	Atmospheric Pressure mBar	Relative Pressure mBar	COppm Carbon monoxide	Photo Ionisation Detector (organic vapour)	H2Sppm Hydrogen Sulphide	Flow l/hr	Water Depth (m)	Tip Depth (m)	Remarks	Operator
BH1	03/02/2015 12:15	0.0	0.0	20.3	0.013	0	0	0	20.3	996	0	66	1	25	0	14.40	17.70	8°C - Overcast	JFRI
BH1	16/03/2015 08:00	0.0	0.0	18.7	0.014	0	0	0	18.7	1004	-2.4	1324	1	410	-4.5	14.00	17.50	5°C - Overcast and drizzle After zeroing, flow rate increased from -7.7 l/hr to -4.5 l/hr over a 2 minute period. Upon removal of monitoring tube atmospheric air being sucked in was audible for a few seconds	JFRI
BH1	22/03/2015 09:00	0.0	0.0	16.7	0.011	0	0	0	16.7	1007	0	1118	1	380	0	14.40	17.50	7°C - Sunny and clear skies	JFRI
BH1	28/03/2015 09:00	0.0	0.0	14.6	0.01	0	0	0	14.6	983	0	600	N/A	220	0	14.17	17.50	13°C - Very windy	JFRI
BH1	11/04/2015 15:00	0.1	0.0	10.2	0.01	2	0	0	10.2	994	-20	120	1	40	-4.5	14.40	17.50	12°C - Sunny	JFRI
BH1	23/04/2015 11:30	0.1	0.0	7.5	N/A	1	0.1	0.1	7.4	1001	0.07	5	N/A	0	N/A	17.50	17.50	15°C - Sunny	JFRI
BH2	03/03/2015 13:00	0.0	0.4	19.9	0.012	0	0	0.4	19.9	993	0	10	1	0	0	1.37	3.43	8°C - Raining	JFRI
BH2	22/03/2015 09:50	0.0	0.3	20	0.01	0	0	0.3	20.0	1005	0	0	1	0	0	1.39	3.45	7°C - Sunny and clear skies	JFRI
BH2	28/03/2015 09:10	0.0	0.1	20.1	0.009	0	0	0.5	20.1	981	0	0	N/A	0	0	1.35	3.45	13°C - Overcast	JFRI
BH2	11/04/2015 15:30	0.0	0.2	20.3	0.008	0	0	0.6	19.8	996	0	0	1	0	0	1.40	3.45	12°C - Sunny	JFRI
BH2	16/03/2015 08:45	0.0	0.3	19.5	0.011	0	0	0.3	19.5	1002	0	10	1	0	0	1.37	3.43	5°C - Overcast and drizzle	JFRI
BH2	23/04/2015 12:00	0.0	0.1	19.4	N/A	0	0	1.3	18.0	1001	0.08	5	N/A	0	N/A	1.40	3.45	15°C - Sunny	JFRI
BH3	03/03/2015 13:45	0.0	0.8	15.5	0.013	0	0	0.8	15.5	993	0	0	1	0	0	20.80	21.20	8°C - Raining	JFRI
BH3	16/03/2015 09:30	0.0	0.8	15.8	0.011	0	0	0.8	15.8	1002	0	0	1	0	0.1	20.79	21.00	5°C - Overcast and drizzle	JFRI
BH3	22/03/2015 10:40	0.0	0.8	13.1	0.009	0	0	0.8	13.1	1007	0	0	1	0	0	20.80	21.05	7°C - Sunny and clear skies	JFRI
BH3	28/03/2015 09:20	0.0	0.8	13.3	0.008	0	0	0.8	13.3	981	0	0	N/A	0	0	20.82	21.00	13°C - Light showers	JFRI
BH3	11/04/2015 14:00	0.1	0.3	20.3	0.008	2	0	0.3	20.3	998	-48	0	1	0	-7.5	20.80	21.00	12°C - Sunny	JFRI
BH3	23/04/2015 12:30	0.0	0.1	17.7	N/A	0	0	0.2	17.7	1001	0.23	0	N/A	0	N/A	20.82	21.00	15°C - Sunny	JFRI
BH4	09/03/2015 14:30	0.0	0.3	18.9	0.013	0	0	0.4	18.9	992	0	35	1	0	0	17.90	23.00	8°C - Raining	JFRI
BH4	16/03/2015 10:45	0.0	0.5	15.9	0.011	0	0	0.5	15.9	1002	0	10	1	0	0.1	17.89	22.90	5°C - Overcast and drizzle	JFRI
BH4	22/03/2015 11:30	0.0	0.6	14.3	0.01	0	0	0.6	14.3	1007	0	0	1	0	0	17.92	23.00	7°C - Sunny and clear skies	JFRI
BH4	28/03/2015 09:30	0.0	0.9	11.9	0.009	0	0	0.9	11.9	980	0	0	N/A	0	0	18.12	23.00	13°C - Light showers	JFRI
BH4	11/04/2015 14:30	0.0	0.8	18.5	0.008	0	0	0.8	18.5	995	-48	0	1	0	-8.2	18.20	23.00	12°C - Sunny	JFRI
BH4	23/04/2015 13:00	0.0	1.3	9.4	N/A	0	0	1.4	9.4	1001	0.41	6	N/A	0	N/A	18.30	23.00	15°C - Sunny	JFRI

APPENDIX 3 LABORATORY TEST RESULTS



APPENDIX 3.1 Summary of Test Results



Client: Datrys

Job No.: SRL164

Site Name: Bonc Wen



Laboratory Test Result Summary

					Classification					Triaxial Compression								Chemical					Additional			
Location Number	Sample Type No.	Sample Depth Top m	Sample Depth Bottom m	Description	LL	PL	PI	% Retained 425µm	Moisture Content %	Bulk Density Mg/m³	Dry Density Mg/m³	Test Type	Specimen Diameter mm	Specimen Length mm	Lateral Pressure {Deviator Stress} kPa	Cohesion Intercept kPa	Friction Angle	Cu kPa	pH	SO₄ % Total	SO₄ mg/l 2:1 Extract	SO₄ mg/l in Water	Cl₂ %	Grading	Oedometer Hand Pene.	Others
TP03	D 1	1.70		Light brown grey mottled fine sandy silty CLAY with a little fine-coarse sub-angular gravel	35	20	15	6	24															✓		
TP03	D 2	2.40		Light brown grey fine-medium sandy silty CLAY with a little fine-coarse sub-angular gravel	36	20	16	15	17										6.6		24.69			✓		
TC01	D 1	0.90		Grey fine to coarse angular sub-angular MUDSTONE																				✓		
TC01	W 1	1.30		GROUNDWATER															6.9		32.92		0.005			
TC02	D 1	1.05		Grey MUDSTONE	Non-Plastic				8.9															✓		
BH01	D 3	2.00		Brown fine-coarse sandy silty CLAY with some fine-coarse sub-angular gravel	30	17	13	9.0	17															✓		
BH01	U 2	2.70	3.15	Very high strength brown grey mottled fine-medium sandy silty CLAY with some fin-coarse sub-rounded sub-angular gravel	29	16	13	13	13	2.240	1.980	UU	200	102	25 50 100 {419 441 496}	140	19	221	7.4		49.38		0.008	✓		
BH01	U 3	3.90	4.35	Brown fine-coarse sandy silty CLAY with some fine-coarse sub-angular sub-rounded gravel	26	15	11	5.1	10															✓		
BH02	U 1	2.20	2.65	Medium strength light brown grey mottled fine-medium sandy silty CLAY with a little fin-coarse sub-angular gravel	46	18	28	2.0	25	2.130	1.700	UU	200	102	25 50 100 {104 111 117}	42	8	56	6.2		49.38		0.008	✓		
BH02	U 4	5.80	6.25	Very high strength brown fine-coarse sandy CLAY with fine-coarse sub-angular gravel	24	12	12	3	10	2.320	2.100	UU	200	102	60 120 240 {515 548 606}	187	14	274	6.9		28.80		0.011	✓		
BH03	D 6	1.70		MADEGROUND (Black slightly clayey fine-coarse ash, brick and angular sub-angular gravel)																				✓		

Client: Datrys

Job No.: SRL164

Site Name: Bonc Wen



Laboratory Test Result Summary

					Classification					Triaxial Compression								Chemical					Additional			
Location Number	Sample Type No.	Sample Depth Top m	Sample Depth Bottom m	Description	LL	PL	PI	% Retained 425µm	Moisture Content %	Bulk Density Mg/m³	Dry Density Mg/m³	Test Type	Specimen Diameter mm	Specimen Length mm	Lateral Pressure {Deviator Stress} kPa	Cohesion Intercept kPa	Friction Angle	Cu kPa	pH	SO₄ % Total	SO₄ mg/l 2:1 Extract	SO₄ mg/l in Water	Cl₂ %	Grading	Oedometer Hand Pene.	Others
BH03	U 1	4.20	4.65	High strength brown grey mottled fine-coarse sandy silty CLAY with fine-coarse sub-angular sub-rounded gravel	24	12	12	5.5	14	2.260	1.970	UU	200	102	40 80 160 {183 215 252}	55	17	108	7.1		41.15		0.008	✓		
BH04	U 1	1.20	1.65	Black brown slightly clayey fine-coarse angular flat MUDSTONE and COAL																				✓		
BH04	U 2	2.40	2.85	Light greyish brown fine-coarse sandy CLAY with fine-coarse angular flat mudstone gravel																				✓		
BH04	U 3	3.60	4.05	High strength brown grey mottled fine-coarse sandy silty CLAY with a little sub-rounded gravel	26	15	11	12	14	2.340	2.060	UU	200	102	35 70 140 {167 181 200}	65	96	91	6.9				0.008	✓		

APPENDIX 3.2 Triaxial Test Results



Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)



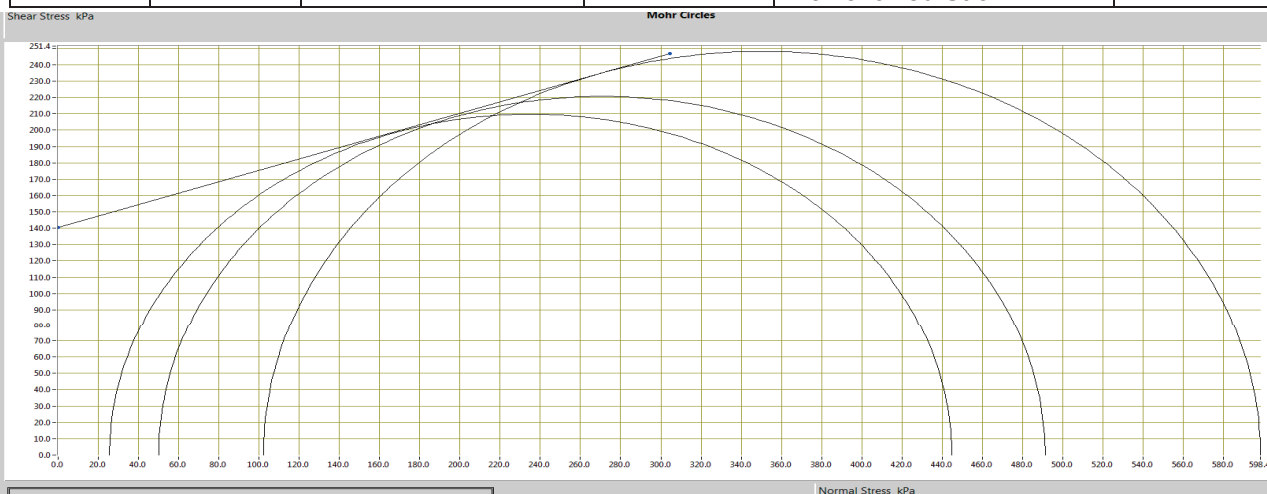
Client	Datrys	Lab Ref	150
Project	Bonc Wen	Job	SRL164
Borehole	BH01	Sample	U2

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	2.70 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m3
Sample Description	Very high strength brown grey mottled fine-medium sandy silty CLAY with fine-coarse sub-rounded sub-angular gravel	Lab. Temperature	19.5 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A1	Stage Reference	1
Depth within Sample	250.00 mm	Description	Gravelly CLAY
Initial Height	200.00 mm	Orientation within Sample	Vertical
Preparation		Initial Diameter	102.00 mm
Initial Bulk Density	2.24 Mg/m3	Initial Moisture Content*	13.4 %
Initial Dry Density	1.98 Mg/m3	Membrane Thickness	0.00 mm
Comments			

* Calculated from initial and dry weights of whole specimen

All Stages Conditions at Failure					
Ref	Cell Pressure	Max. Corrected Deviator Stress	Cumulative Strain	Mode of Failure	Shear Strength
Stage1	25.6kPa	419kPa	9.05%	Max Deviator Stress or Max allowed Strain	210kPa
Stage2	50.1kPa	441kPa	10.59%	Max Deviator Stress or Max allowed Strain	221kPa
Stage3	102.2kPa	496kPa	16.20%	Max Deviator Stress or Max allowed Strain	248kPa



Shear Strength Properties

Angle of Shear Resistance: 19.26 Degrees

Cohesion: 140.45 kPa

Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)



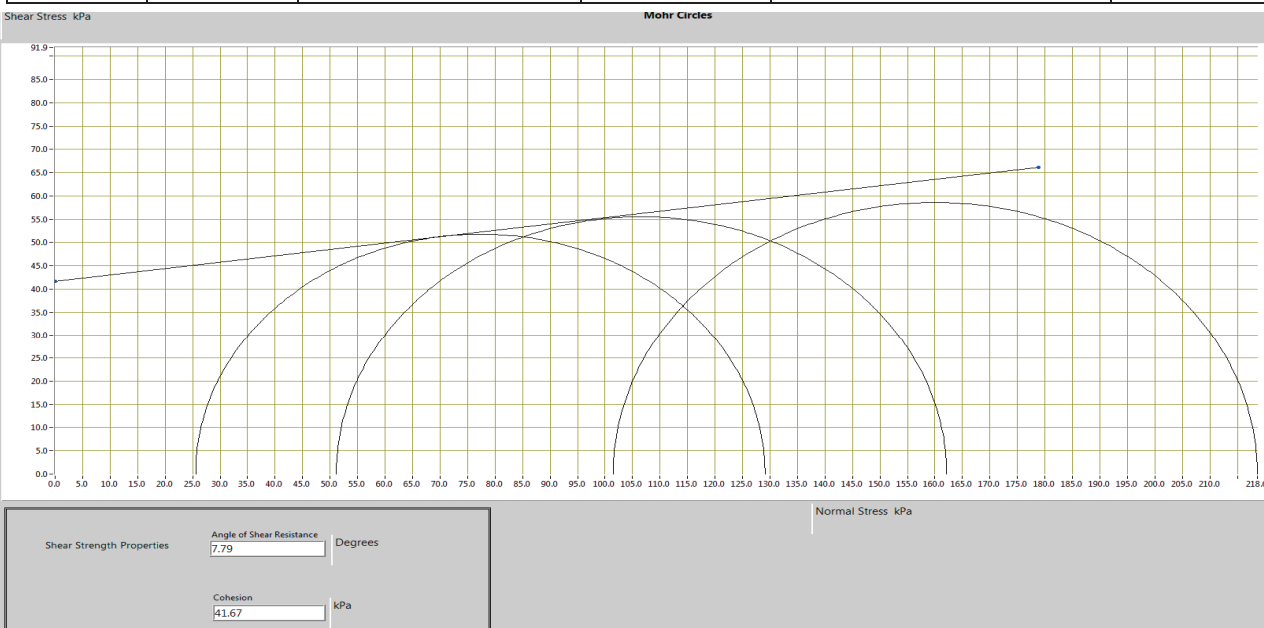
Client	Datrys	Lab Ref	74
Project	Bonc Wen	Job	SRL164
Borehole	BH02	Sample	U1

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	2.20 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	Medium strength light brown grey mottled fine-medium sandy silty CLAY	Lab. Temperature	18.5 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A1	Stage Reference	1
Depth within Sample	250.00 mm	Description	CLAY
Initial Height	200.00 mm	Orientation within Sample	Vertical
Preparation		Initial Diameter	102.00 mm
Initial Bulk Density	2.13 Mg/m ³	Initial Moisture Content*	25.4 %
Initial Dry Density	1.70 Mg/m ³	Membrane Thickness	0.00 mm
Comments			

* Calculated from initial and dry weights of whole specimen

All Stages Conditions at Failure					
Ref	Cell Pressure	Max. Corrected Deviator Stress	Cumulative Strain	Mode of Failure	Shear Strength
Stage1	25.6kPa	104kPa	11.69%	Max Deviator Stress or Max allowed Strain	52kPa
Stage2	51.1kPa	111kPa	14.26%	Max Deviator Stress or Max allowed Strain	56kPa
Stage3	101.5kPa	117kPa	15.79%	Max Deviator Stress or Max allowed Strain	59kPa



Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)



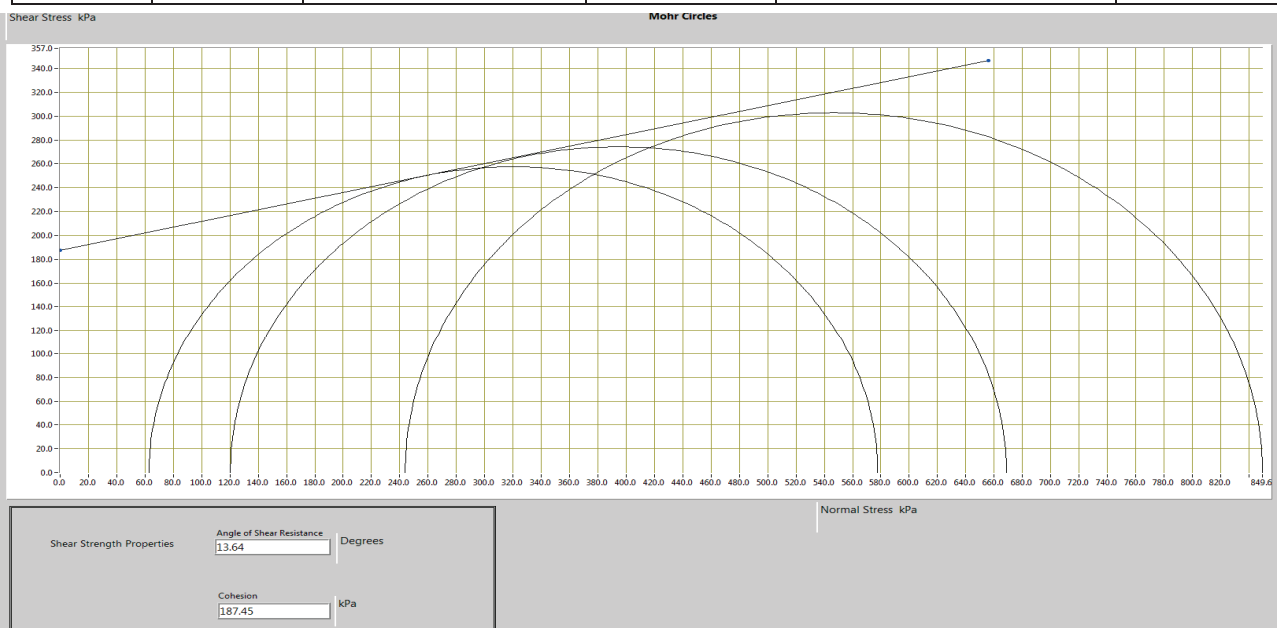
Client	Datrys	Lab Ref	83
Project	Bonc Wen	Job	SRL164
Borehole	BH02	Sample	U4

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	5.80 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	Very high strength brown fine-coarse sandy CLAY with fine-coarse sub-angular gravel	Lab. Temperature	18.5 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A1	Stage Reference	1
Depth within Sample	250.00 mm	Description	CLAY
Initial Height	200.00 mm	Orientation within Sample	Vertical
Preparation		Initial Diameter	102.00 mm
Initial Bulk Density	2.32 Mg/m ³	Initial Moisture Content*	10.5 %
Initial Dry Density	2.10 Mg/m ³	Membrane Thickness	0.00 mm
Comments			

* Calculated from initial and dry weights of whole specimen

All Stages Conditions at Failure					
Ref	Cell Pressure	Max. Corrected Deviator Stress	Cumulative Strain	Mode of Failure	Shear Strength
Stage1	62.8kPa	515kPa	12.53%	Max Deviator Stress or Max allowed Strain	257kPa
Stage2	120.3kPa	548kPa	14.61%	Max Deviator Stress or Max allowed Strain	274kPa
Stage3	243.9kPa	606kPa	18.17%	Max Deviator Stress or Max allowed Strain	303kPa



Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)



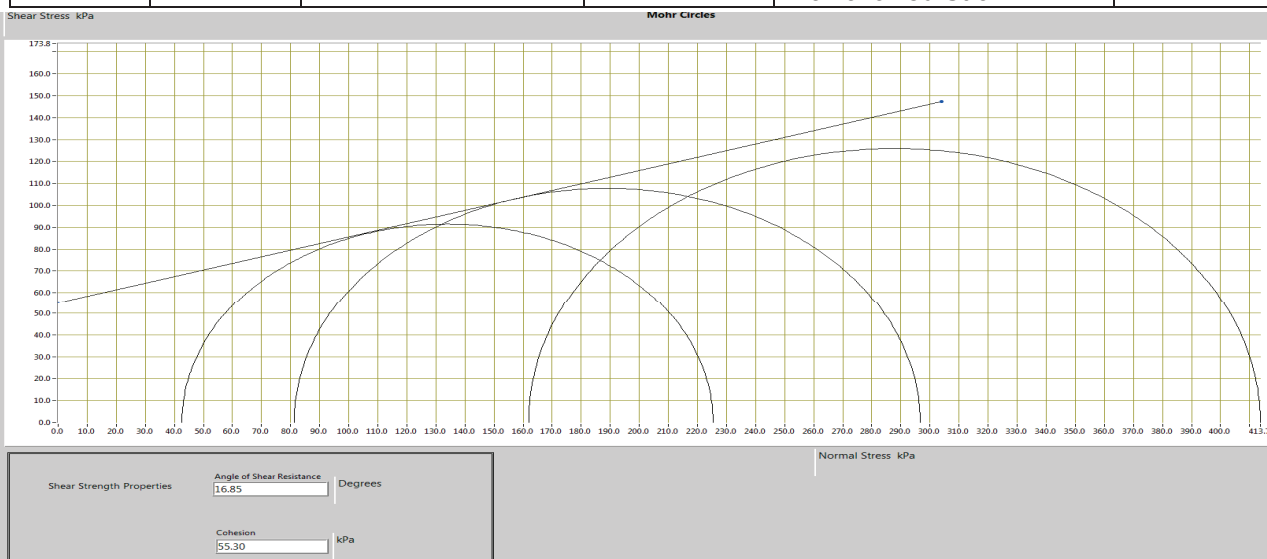
Client	Datrys	Lab Ref	15
Project	Bonc Wen	Job	SRL164
Borehole	BH03	Sample	U1

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	4.20 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	High strength brown grey fissured fine-coarse sandy silty CLAY with fin-coarse sub-rounded sub-angular gravel	Lab. Temperature	20.0 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A1	Stage Reference	1
Depth within Sample	250.00 mm	Description	gravelly clay
Initial Height	200.00 mm	Orientation within Sample	Vertical
Preparation		Initial Diameter	102.00 mm
Initial Bulk Density	2.26 Mg/m ³	Initial Moisture Content*	14.3 %
Initial Dry Density	1.97 Mg/m ³	Membrane Thickness	0.00 mm
Comments			

* Calculated from initial and dry weights of whole specimen

All Stages Conditions at Failure					
Ref	Cell Pressure	Max. Corrected Deviator Stress	Cumulative Strain	Mode of Failure	Shear Strength
Stage1	42.6kPa	183kPa	8.08%	Max Deviator Stress or Max allowed Strain	91kPa
Stage2	81.3kPa	215kPa	11.17%	Max Deviator Stress or Max allowed Strain	108kPa
Stage3	161.9kPa	252kPa	14.74%	Max Deviator Stress or Max allowed Strain	126kPa



Undrained Shear Strength in Triaxial Compression without measurement of Pore Pressure (Quick Undrained)



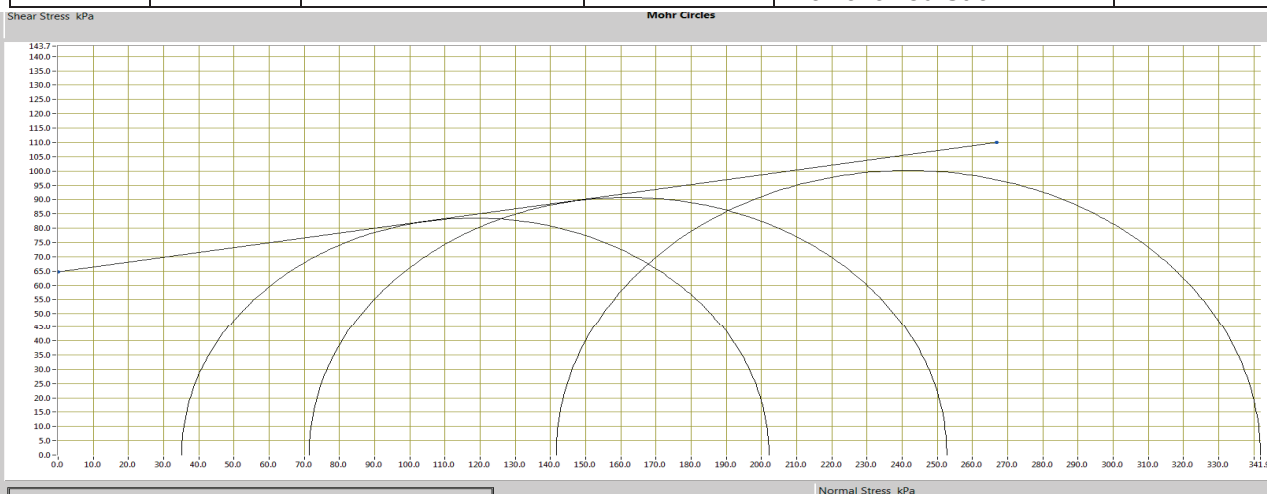
Client	Datrys	Lab Ref	51
Project	Bonc Wen	Job	SRL164
Borehole	BH04	Sample	U3

Test & Sample Details			
Standard	BS 1377 : Part 7 : Clause 9	Sample Depth	3.60 m
Sample Type	Undisturbed sample - open drive	Particle Density	2.65 Mg/m ³
Sample Description	High strength light brown grey mottled fine-coarse sandy silty CLAY with a little fine-coarse sub-rounded gravel	Lab. Temperature	19.5 deg.C
Variations from Procedure	None		

Specimen Details			
Specimen Reference	A1	Stage Reference	1
Depth within Sample	3.60 mm	Description	CLAY
Initial Height	200.00 mm	Orientation within Sample	Vertical
Preparation		Initial Diameter	102.00 mm
Initial Bulk Density	2.34 Mg/m ³	Initial Moisture Content*	13.7 %
Initial Dry Density	2.06 Mg/m ³	Membrane Thickness	0.00 mm
Comments			

* Calculated from initial and dry weights of whole specimen

All Stages Conditions at Failure					
Ref	Cell Pressure	Max. Corrected Deviator Stress	Cumulative Strain	Mode of Failure	Shear Strength
Stage1	35.1kPa	167kPa	12.21%	Max Deviator Stress or Max allowed Strain	84kPa
Stage2	71.4kPa	181kPa	14.76%	Max Deviator Stress or Max allowed Strain	91kPa
Stage3	141.6kPa	200kPa	17.88%	Max Deviator Stress or Max allowed Strain	100kPa



Shear Strength Properties

Angle of Shear Resistance: 9.63 Degrees

Cohesion: 64.72 kPa

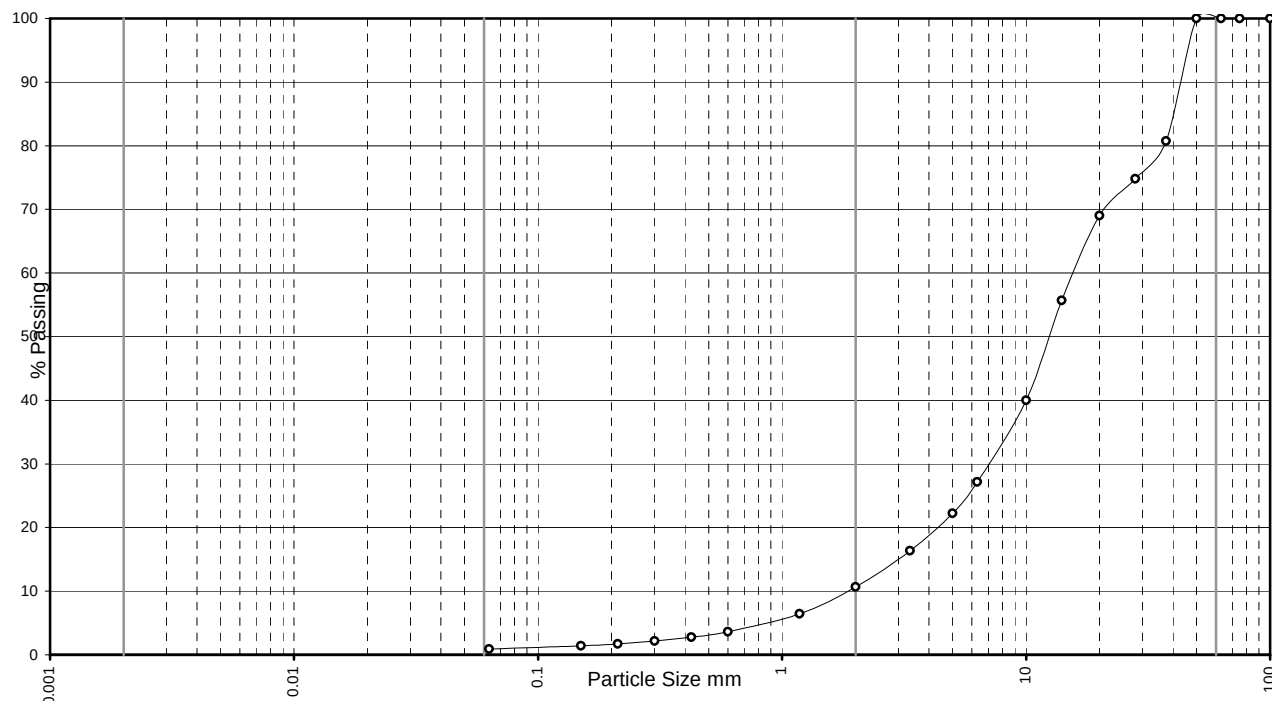
APPENDIX 3.3 Particle Size Distribution Results



Site: Bonc Wen

Borehole No TC01 Sample D 1 Depth: 0.90 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Grey fine to coarse angular sub-angular MUDSTONE

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	81
28	75
20	69
14	56
10	40
6.30	27
5	22

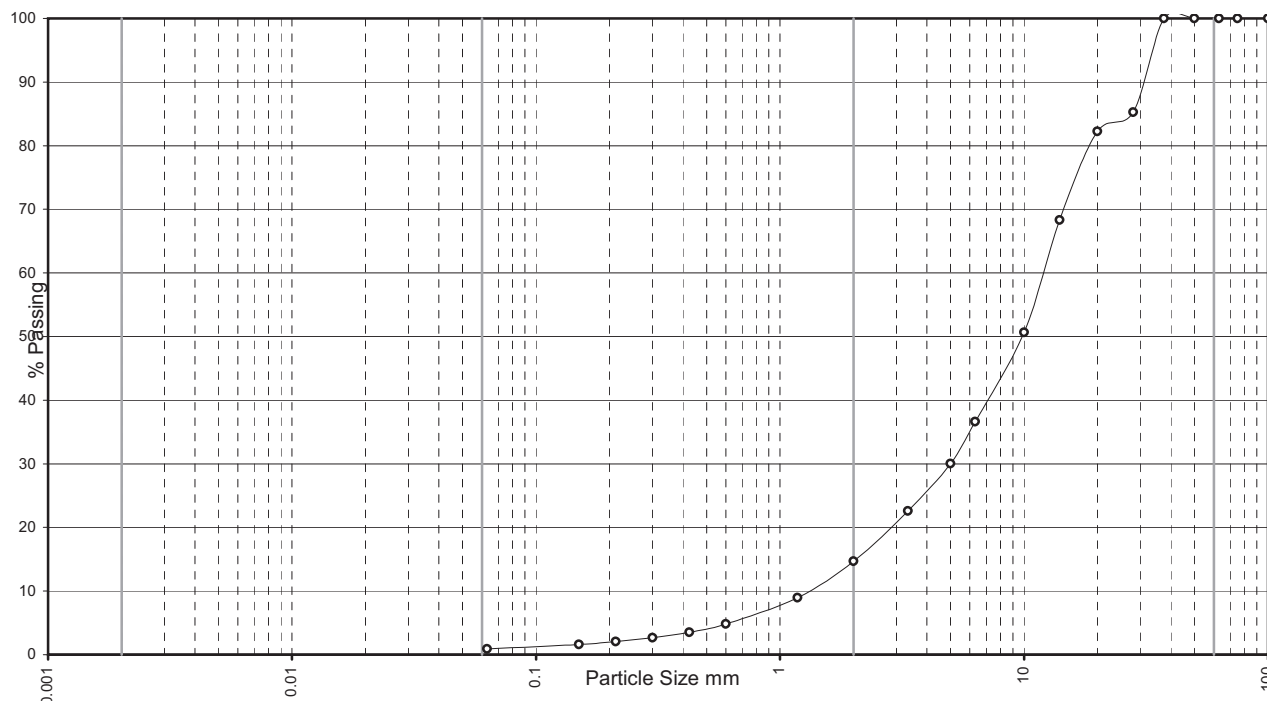
Sieve Size mm	% Passing
3.35	16
2	11
1.18	6
0.6	4
0.425	3
0.3	2
0.212	2
0.15	1
0.063	1

Cobbles	
Gravel	89
Sand	10
Silt/Clay	1

Site: Bonc Wen

Borehole No TC02 Sample D 1 Depth: 1.05 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Grey fine to coarse angular sub-angular MUDSTONE

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	100
28	85
20	82
14	68
10	51
6.30	37
5	30

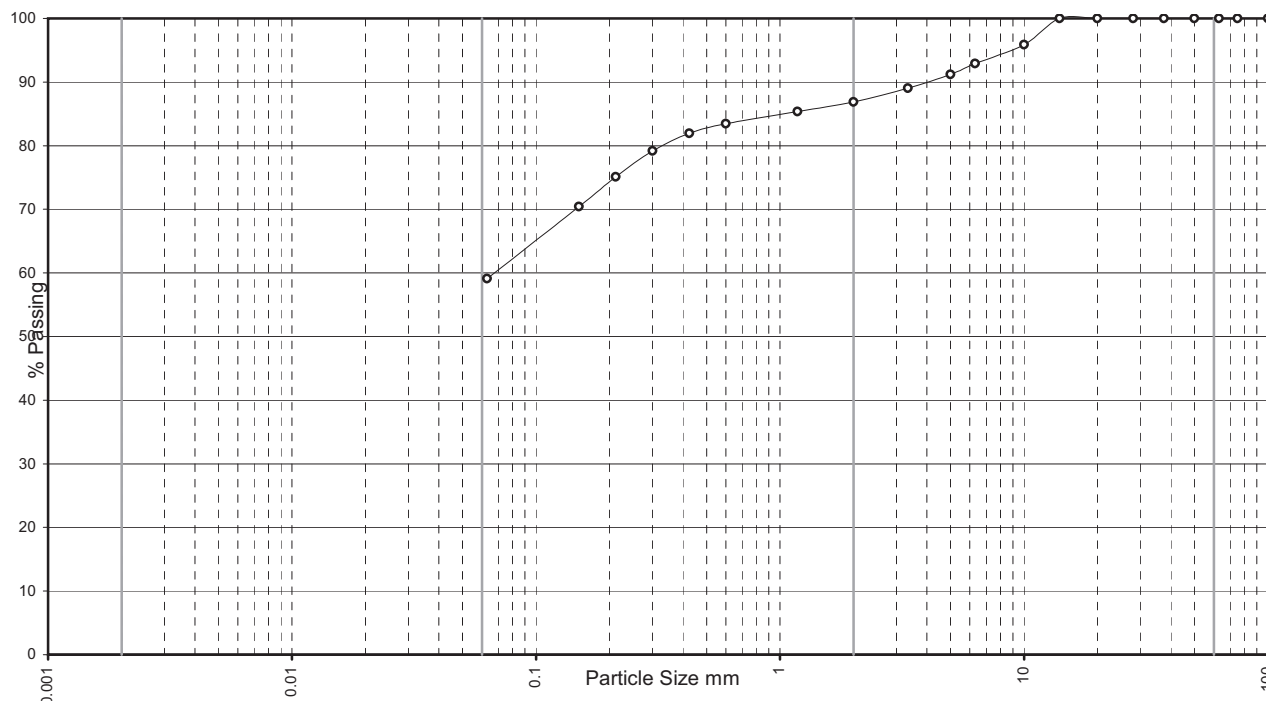
Sieve Size mm	% Passing
3.35	23
2	15
1.18	9
0.6	5
0.425	4
0.3	3
0.212	2
0.15	2
0.063	1

Cobbles	
Gravel	85
Sand	14
Silt/Clay	1

Site: Bonc Wen

Borehole No TP03 Sample D 1 Depth: 1.70 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Light brown grey mottled fine-coarse sandy CLAY with a little fine-coarse sub-angular gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	100
28	100
20	100
14	100
10	96
6.30	93
5	91

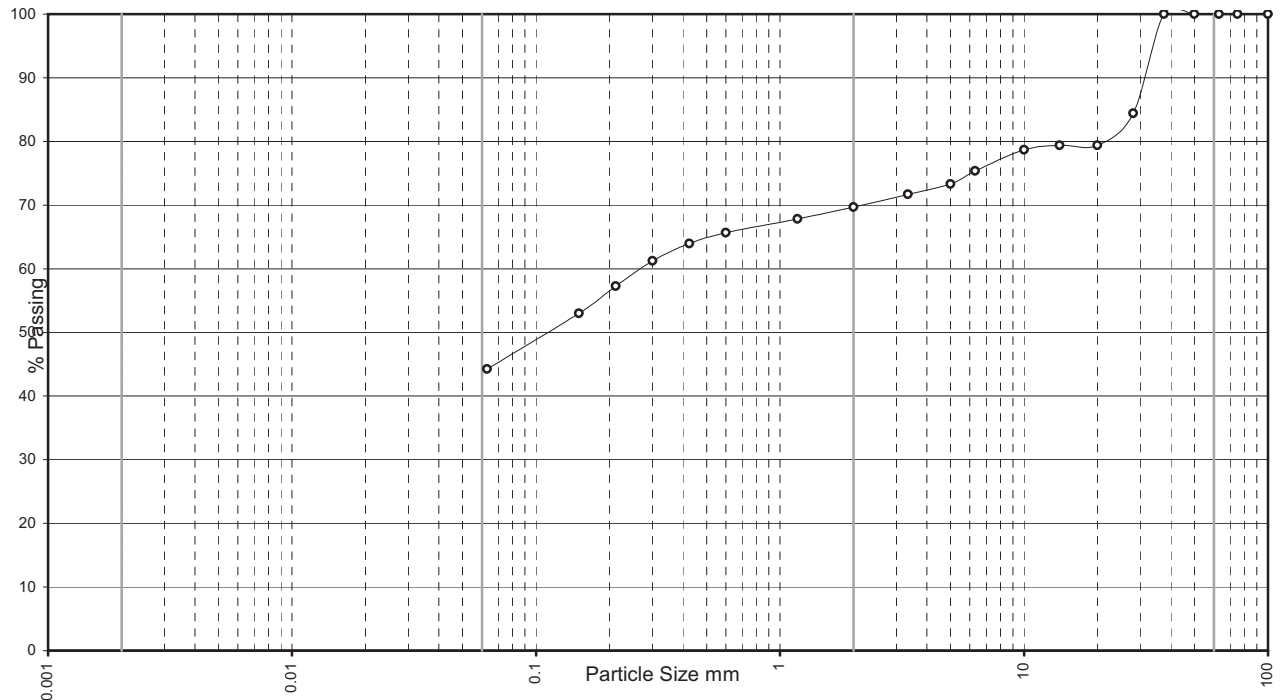
Sieve Size mm	% Passing
3.35	89
2	87
1.18	85
0.6	83
0.425	82
0.3	79
0.212	75
0.15	70
0.063	59

Cobbles	
Gravel	13
Sand	28
Silt/Clay	59

Site: Bonc Wen

Borehole No BH01 Sample D 3 Depth: 2.00 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Brown fine-coarse sandy silty CLAY with some fine-coarse sub-angular gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	100
28	84
20	79
14	79
10	79
6.30	75
5	73

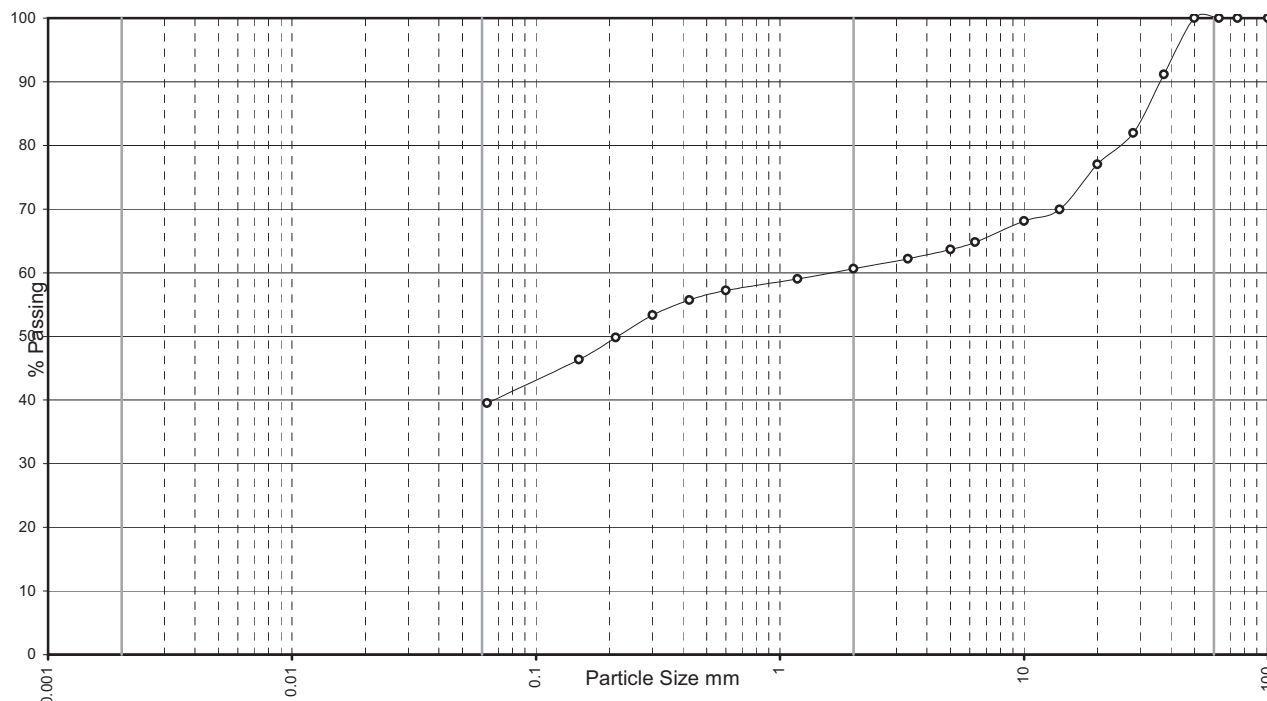
Sieve Size mm	% Passing
3.35	72
2	70
1.18	68
0.6	66
0.425	64
0.3	61
0.212	57
0.15	53
0.063	44

Cobbles	
Gravel	30
Sand	25
Silt/Clay	44

Site: Bonc Wen

Borehole No BH01 Sample U 2 Depth: 2.70 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Brown fine-coarse sandy silty CLAY with some fine-coarse sub-angular gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	91
28	82
20	77
14	70
10	68
6.30	65
5	64

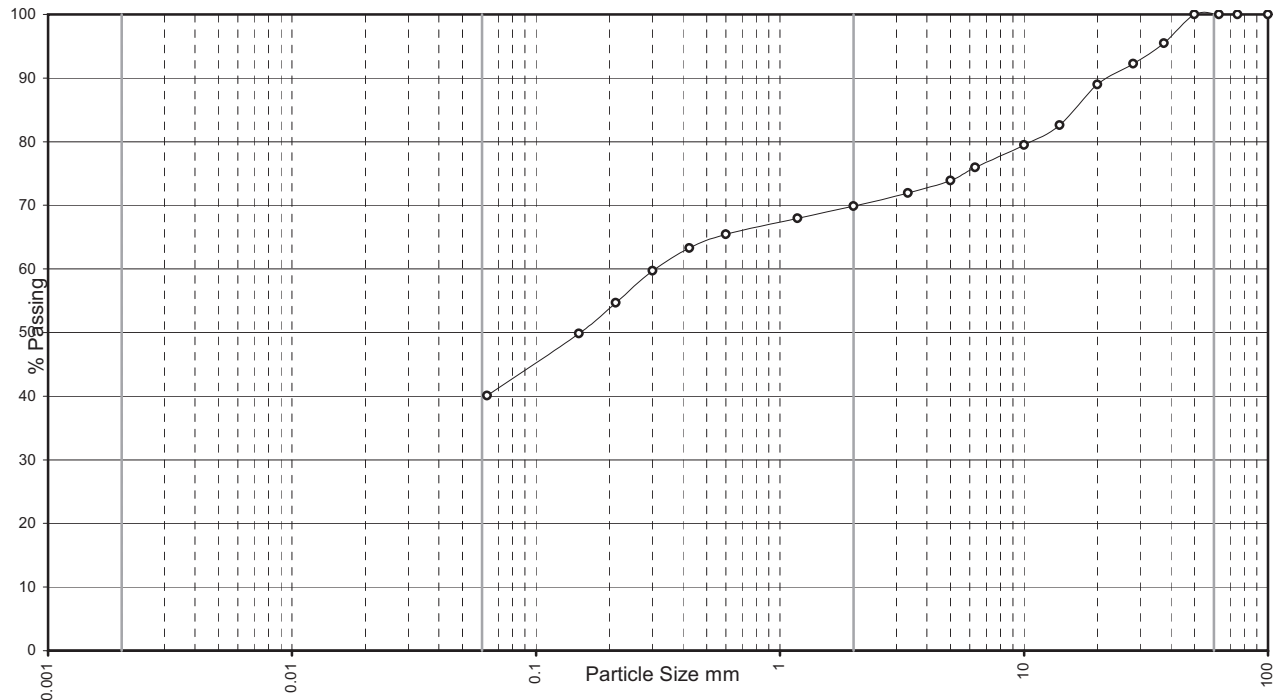
Sieve Size mm	% Passing
3.35	62
2	61
1.18	59
0.6	57
0.425	56
0.3	53
0.212	50
0.15	46
0.063	40

Cobbles	
Gravel	39
Sand	21
Silt/Clay	40

Site: Bonc Wen

Borehole No BH01 Sample U 3 Depth: 3.90 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Brown fine-coarse sandy silty CLAY with some fine-coarse sub-angular sub-rounded gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	95
28	92
20	89
14	83
10	79
6.30	76
5	74

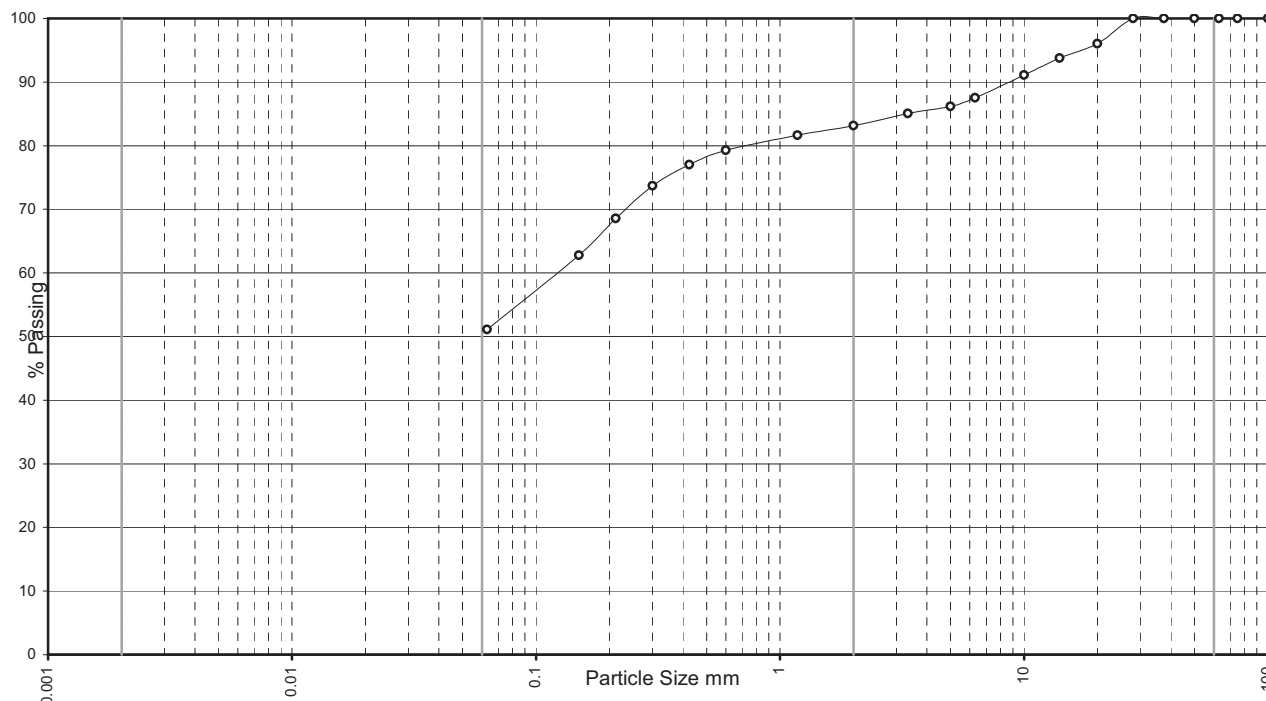
Sieve Size mm	% Passing
3.35	72
2	70
1.18	68
0.6	65
0.425	63
0.3	60
0.212	55
0.15	50
0.063	40

Cobbles	
Gravel	30
Sand	30
Silt/Clay	40

Site: Bonc Wen

Borehole No BH02 Sample U 1 Depth: 2.20 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Light brown grey mottled fine-coarse sandy silty CLAY with a little fine-coarse sub-angular gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	100
28	100
20	96
14	94
10	91
6.30	88
5	86

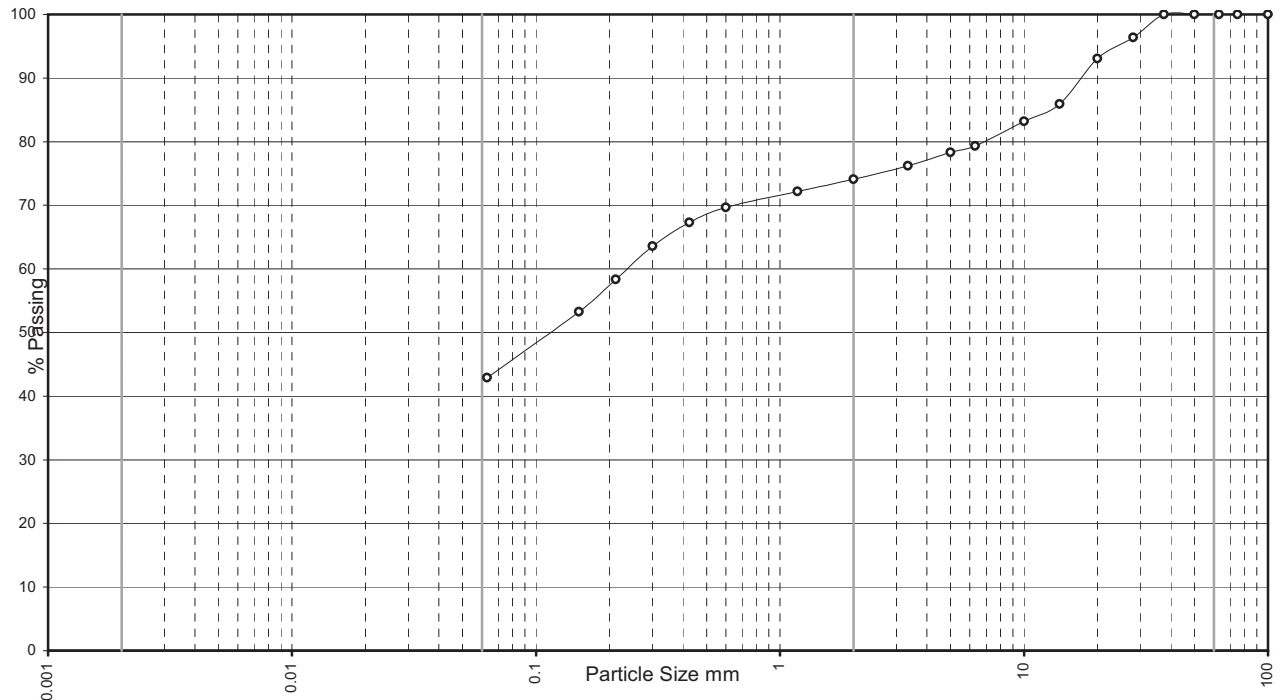
Sieve Size mm	% Passing
3.35	85
2	83
1.18	82
0.6	79
0.425	77
0.3	74
0.212	69
0.15	63
0.063	51

Cobbles	
Gravel	17
Sand	32
Silt/Clay	51

Site: Bonc Wen

Borehole No BH04 Sample U 3 Depth: 3.60 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Light brown grey mottled fine-coarse sandy CLAY with a little fine-coarse sub-rounded gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	100
28	96
20	93
14	86
10	83
6.30	79
5	78

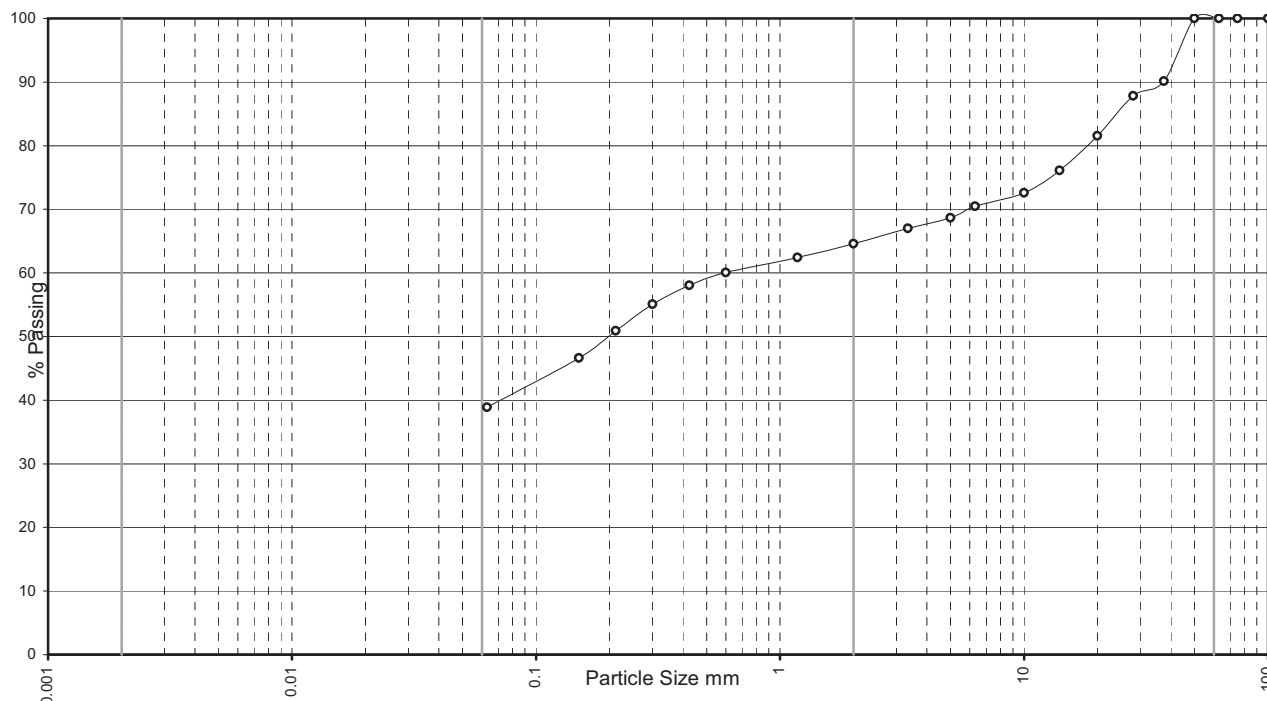
Sieve Size mm	% Passing
3.35	76
2	74
1.18	72
0.6	70
0.425	67
0.3	64
0.212	58
0.15	53
0.063	43

Cobbles	
Gravel	26
Sand	31
Silt/Clay	43

Site: Bonc Wen

Borehole No BH02 Sample U 4 Depth: 5.80 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Brown fine-coarse sandy silty CLAY with some fine-coarse sub-angular gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	90
28	88
20	82
14	76
10	73
6.30	70
5	69

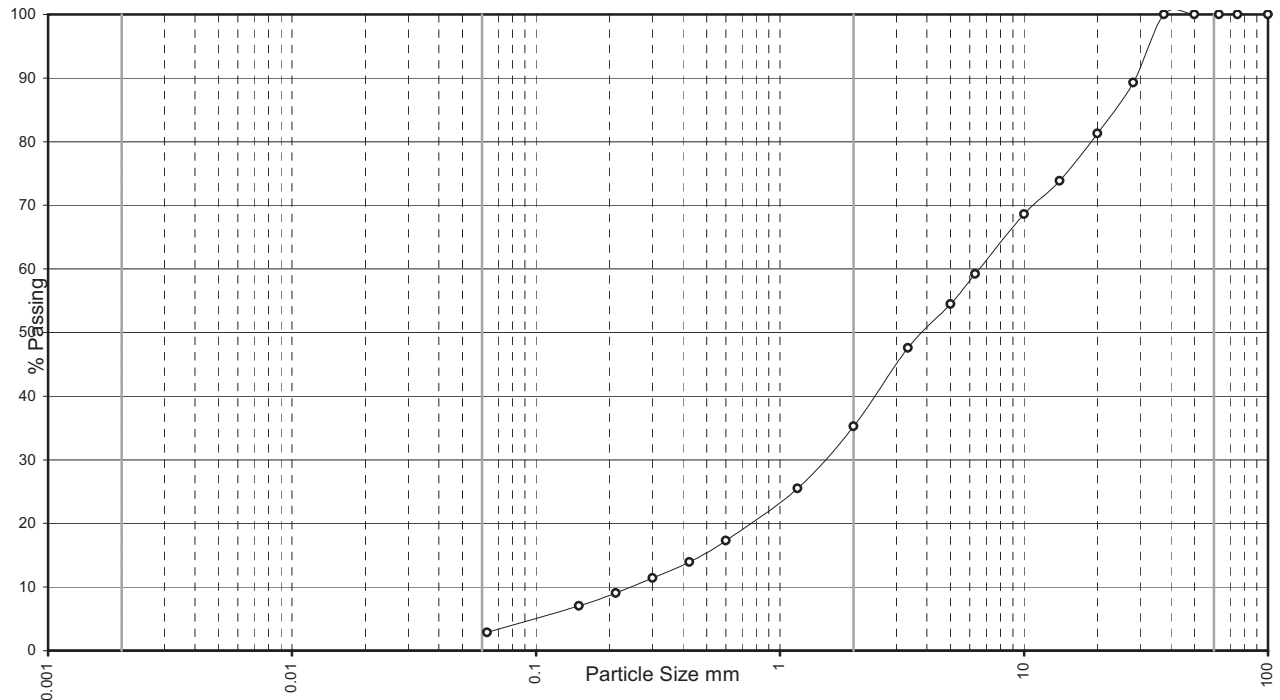
Sieve Size mm	% Passing
3.35	67
2	65
1.18	62
0.6	60
0.425	58
0.3	55
0.212	51
0.15	47
0.063	39

Cobbles	
Gravel	35
Sand	26
Silt/Clay	39

Site: Bonc Wen

Borehole No BH03 Sample D 6 Depth: 1.70 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

MADEGROUND (Black slightly clayey fine-coarse ash, brick and angular sub-angular gravel)

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	100
28	89
20	81
14	74
10	69
6.30	59
5	54

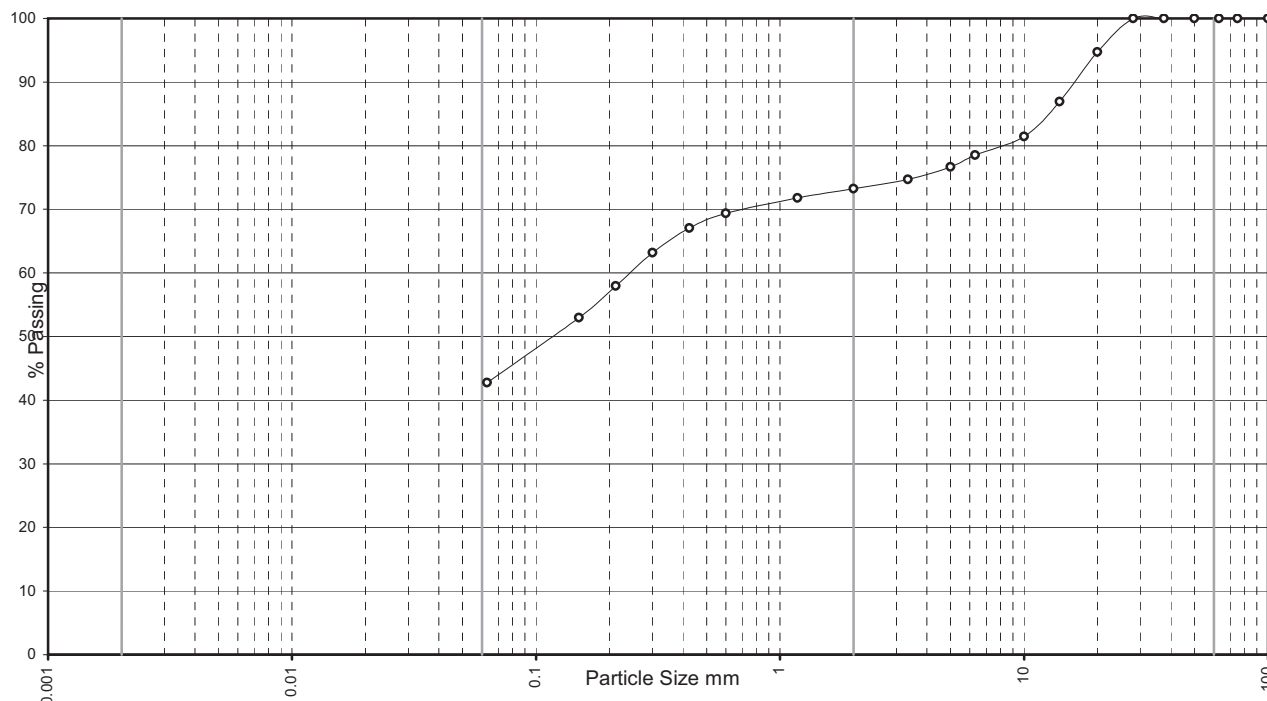
Sieve Size mm	% Passing
3.35	48
2	35
1.18	26
0.6	17
0.425	14
0.3	11
0.212	9
0.15	7
0.063	3

Cobbles	
Gravel	65
Sand	32
Silt/Clay	3

Site: Bonc Wen

Borehole No BH03 Sample U 1 Depth: 4.20 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Brown fine-coarse sandy silty CLAY with some fine-coarse sub-angular sub-rounded gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	100
28	100
20	95
14	87
10	81
6.30	79
5	77

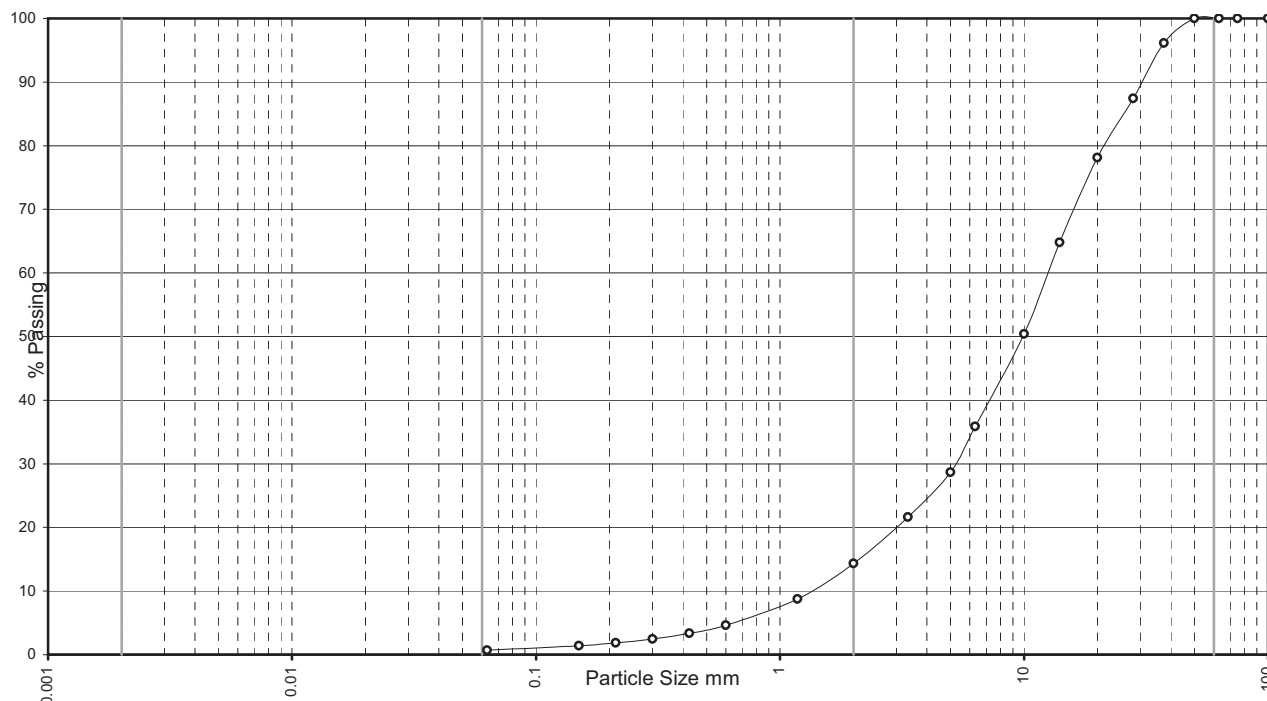
Sieve Size mm	% Passing
3.35	75
2	73
1.18	72
0.6	69
0.425	67
0.3	63
0.212	58
0.15	53
0.063	43

Cobbles	
Gravel	27
Sand	30
Silt/Clay	43

Site: Bonc Wen

Borehole No BH04 Sample U 1 Depth: 1.20 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Black brown slightly clayey fine-coarse angular flat MUDSTONE and COAL

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	100
38	96
28	87
20	78
14	65
10	50
6.30	36
5	29

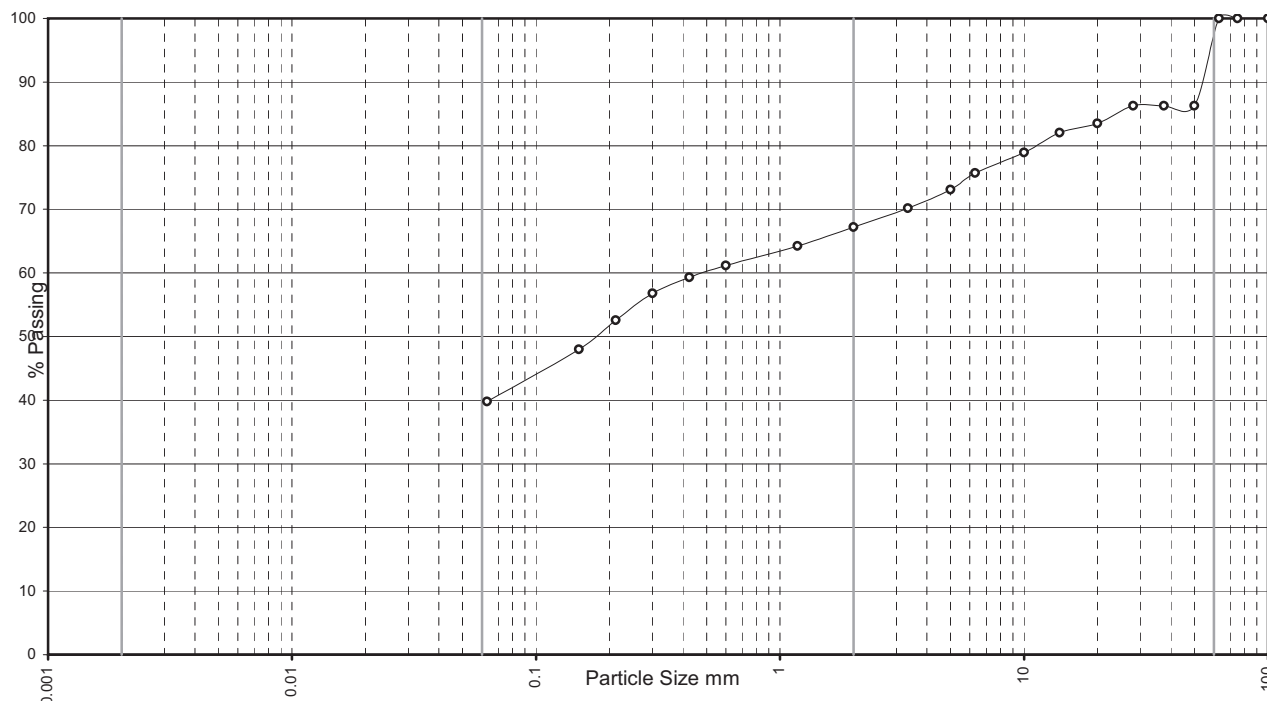
Sieve Size mm	% Passing
3.35	22
2	14
1.18	9
0.6	5
0.425	3
0.3	2
0.212	2
0.15	1
0.063	1

Cobbles	
Gravel	86
Sand	14
Silt/Clay	1

Site: Bonc Wen

Borehole No BH04 Sample U 2 Depth: 2.40 m

Particle Size Distribution BS1377 :1990 Part 2
Test 9.2 Wet Sieving, 9.4 Sedimentation - Pipette Method



CLAY	SILT			SAND			GRAVEL			COBBLES
	Fine 0.002	Medium 0.006	Coarse 0.02	Fine 0.06	Medium 0.2	Coarse 0.6	Fine 2.0	Medium 6.0	Coarse 20	

SAMPLE DESCRIPTION

Light greyish brown fine-coarse sandy CLAY with fine-coarse angular flat mudstone gravel

Sieve Size mm	% Passing
125	100
100	100
75	100
63	100
50	86
38	86
28	86
20	84
14	82
10	79
6.30	76
5	73

Sieve Size mm	% Passing
3.35	70
2	67
1.18	64
0.6	61
0.425	59
0.3	57
0.212	53
0.15	48
0.063	40

Cobbles	
Gravel	33
Sand	27
Silt/Clay	40

APPENDIX 3.4 Chemical Contamination Results





Certificate of Analysis

Certificate Number 15-29428

23-Mar-15

Client Strata Renewables
Jodrell Bank Service Station
Knutsford Road
Cranage
Cheshire
CW4 8HU

Our Reference 15-29428

Client Reference SRL164

Contract Title Bonc Wen

Description 10 Soil samples.

Date Received 11-Mar-15

Date Started 11-Mar-15

Date Completed 23-Mar-15

Test Procedures Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

Notes Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781167	781168	781169	781170	781171	781172
Sample ID	TC 02	TC 01	TP 01	TP 02	TP 02	TP 03
Depth	0.90	1.30	0.50	0.30	0.80	0.55
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	11	10	19	30	20	8.9
Barium	DETSC 2301#	1.5	mg/kg	76	75	100	90	93	58
Beryllium	DETSC 2301#	0.2	mg/kg	1.2	1.2	1.0	0.8	1.6	1.0
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	1.2	1.5	0.4	0.8	0.7	0.7
Cadmium	DETSC 2301#	0.1	mg/kg	18	19	1.5	2.2	2.2	2.8
Chromium	DETSC 2301#	0.15	mg/kg	13	13	17	37	15	16
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	27	25	38	47	49	31
Lead	DETSC 2301#	0.3	mg/kg	190	95	550	130	160	23
Mercury	DETSC 2325#	0.05	mg/kg	0.07	< 0.05	0.08	0.06	0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	19	20	19	38	31	26
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	0.6	0.9	0.7	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	24	24	29	43	28	49
Zinc	DETSC 2301#	1	mg/kg	1200	1100	980	280	390	100
Inorganics									
pH	DETSC 2008#			8.6	7.2	7.8	8.0	7.6	7.9
Cyanide total	DETSC 2130#	0.1	mg/kg	0.1	0.2	0.2	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	8.8	7.2	7.4	15	10	2.4
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	260	25	58	25	22	38
Sulphide	DETSC 2024#	10	mg/kg	20	28	52	64	60	24
Total Sulphate as SO4	DETSC 2321#	0.01	%	0.25	0.05	0.09	0.09	0.08	0.03
Petroleum Hydrocarbons									
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	3.5	< 0.6	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	3.1	< 1.4	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781167	781168	781169	781170	781171	781172
Sample ID	TC 02	TC 01	TP 01	TP 02	TP 02	TP 03
Depth	0.90	1.30	0.50	0.30	0.80	0.55
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
PAHs									
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	0.15	< 0.03	< 0.03	0.07	< 0.03	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	0.16	< 0.03	< 0.03	0.07	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	0.71	< 0.03	< 0.03	0.09	< 0.03	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	0.76	< 0.03	< 0.03	0.08	< 0.03	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	0.25	< 0.03	< 0.03	0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	0.32	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	0.33	< 0.03	< 0.03	0.04	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	0.22	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	0.12	< 0.03	< 0.03	< 0.03	< 0.03	< 0.03
Total PAH - USEPA 16	DETSC 3303	0.1	mg/kg	3.3	< 0.10	< 0.10	0.42	< 0.10	< 0.10
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.4	0.4	0.4	< 0.3	0.6	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428
 Client Ref SRL164
 Contract Title Bonc Wen

Lab No	781167	781168	781169	781170	781171	781172
Sample ID	TC 02	TC 01	TP 01	TP 02	TP 02	TP 03
Depth	0.90	1.30	0.50	0.30	0.80	0.55
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
VOCs									
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01

Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781167	781168	781169	781170	781171	781172
Sample ID	TC 02	TC 01	TP 01	TP 02	TP 02	TP 03
Depth	0.90	1.30	0.50	0.30	0.80	0.55
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs									
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781167	781168	781169	781170	781171	781172
Sample ID	TC 02	TC 01	TP 01	TP 02	TP 02	TP 03
Depth	0.90	1.30	0.50	0.30	0.80	0.55
Other ID						
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781173	781174	781175	781176
Sample ID	TP03	TP04	TP04	TP04
Depth	1.00	0.30	1.00	1.75
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Metals							
Arsenic	DETSC 2301#	0.2	mg/kg	9.3	7.5	13	79
Barium	DETSC 2301#	1.5	mg/kg	83	37	74	56
Beryllium	DETSC 2301#	0.2	mg/kg	1.1	0.9	1.5	0.8
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	0.8	0.6	1.1	1.7
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.6	0.7	0.6
Chromium	DETSC 2301#	0.15	mg/kg	11	15	10	16
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	35	30	44	26
Lead	DETSC 2301#	0.3	mg/kg	41	18	39	53
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.07
Nickel	DETSC 2301#	1	mg/kg	29	33	27	18
Selenium	DETSC 2301#	0.5	mg/kg	1.5	< 0.5	0.6	1.7
Vanadium	DETSC 2301	0.8	mg/kg	15	12	18	25
Zinc	DETSC 2301#	1	mg/kg	130	110	110	45
Inorganics							
pH	DETSC 2008#			8.0	8.0	7.9	5.1
Cyanide total	DETSC 2130#	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Organic matter	DETSC 2002#	0.1	%	14	1.3	11	15
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	110	10	49	68
Sulphide	DETSC 2024#	10	mg/kg	36	40	48	40
Total Sulphate as SO4	DETSC 2321#	0.01	%	0.05	0.01	0.07	0.48
Petroleum Hydrocarbons							
Aliphatic C5-C6	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C6-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aliphatic C10-C12	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C12-C16	DETSC 3072#	1.2	mg/kg	< 1.2	< 1.2	< 1.2	< 1.2
Aliphatic C16-C21	DETSC 3072#	1.5	mg/kg	< 1.5	< 1.5	< 1.5	< 1.5
Aliphatic C21-C35	DETSC 3072#	3.4	mg/kg	< 3.4	< 3.4	< 3.4	< 3.4
Aliphatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Aromatic C5-C7	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Aromatic C7-C8	DETSC 3321*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.01
Aromatic C8-C10	DETSC 3321*	0.01	mg/kg	< 0.01	0.10	0.06	0.35
Aromatic C10-C12	DETSC 3072#	0.9	mg/kg	< 0.9	< 0.9	< 0.9	< 0.9
Aromatic C12-C16	DETSC 3072#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aromatic C16-C21	DETSC 3072#	0.6	mg/kg	< 0.6	< 0.6	< 0.6	< 0.6
Aromatic C21-C35	DETSC 3072#	1.4	mg/kg	< 1.4	< 1.4	< 1.4	< 1.4
Aromatic C5-C35	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
TPH Ali/Aro	DETSC 3072*	10	mg/kg	< 10	< 10	< 10	< 10
Benzene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3321#	0.01	mg/kg	< 0.01	0.01	< 0.01	0.06

Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781173	781174	781175	781176
Sample ID	TP03	TP04	TP04	TP04
Depth	1.00	0.30	1.00	1.75
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Toluene	DETSC 3321#	0.01	mg/kg	< 0.01	< 0.01	< 0.01	0.01
Xylene	DETSC 3321#	0.01	mg/kg	< 0.01	0.09	0.05	0.28
PAHs							
Naphthalene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Acenaphthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluorene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Phenanthrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03
Anthracene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03
Pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	0.05	< 0.03
Benzo(a)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Chrysene	DETSC 3303	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(b)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(k)fluoranthene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(a)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Benzo(g,h,i)perylene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Dibenzo(a,h)anthracene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Indeno(1,2,3-c,d)pyrene	DETSC 3303#	0.03	mg/kg	< 0.03	< 0.03	< 0.03	< 0.03
Total PAH - USEPA 16	DETSC 3303	0.1	mg/kg	< 0.10	< 0.10	0.14	< 0.10
Phenols							
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	0.5

Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781173	781174	781175	781176
Sample ID	TP03	TP04	TP04	TP04
Depth	1.00	0.30	1.00	1.75
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
VOCs							
Vinyl Chloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1 Dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trans-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Cis-1,2-dichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
2,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chloroform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Carbon tetrachloride	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Benzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.10	0.03	0.11
1,2-dichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Trichloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromomethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Bromodichloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
cis-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Toluene	DETSC 3431*	0.01	mg/kg	< 0.01	0.01	0.03	2.1
trans-1,3-dichloropropene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,2-trichloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachloroethylene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3-dichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Dibromochloromethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromoethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Chlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,1,1,2-tetrachloroethane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Ethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.21	0.02	3.5
m+p-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.33	0.09	11
o-Xylene	DETSC 3431*	0.01	mg/kg	< 0.01	0.16	0.04	< 0.01
Styrene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.01	0.61
Bromoform	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Isopropylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.03	0.02	0.75
Bromobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-propylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.02	< 0.01	0.54
2-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,3,5-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.20	0.12	6.4
4-chlorotoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Tert-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trimethylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	0.48	0.17	12

Summary of Chemical Analysis

Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781173	781174	781175	781176
Sample ID	TP03	TP04	TP04	TP04
Depth	1.00	0.30	1.00	1.75
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
sec-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
p-isopropyltoluene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	0.02	0.59
1,3-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,4-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
n-butylbenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	1.1
1,2-dichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2-dibromo-3-chloropropane	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,4-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
Hexachlorobutadiene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
1,2,3-trichlorobenzene	DETSC 3431*	0.01	mg/kg	< 0.01	< 0.01	< 0.01	< 0.01
SVOCs							
Phenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Benzyl Alcohol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-chloroisopropyl)ether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3&4-Methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dimethylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis-(dichloroethoxy)methane	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2,4-Trichlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chloro-3-methylphenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methylnaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorocyclopentadiene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,6-Trichlorophenol	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4,5-Trichlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Chloronaphthalene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,4-Dinitrotoluene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
3-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzofuran	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,6-Dinitrotoluene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,4,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Chlorophenylphenylether	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Nitroaniline	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4,6-Dinitrophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Diphenylamine	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4-Bromophenylphenylether	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Hexachlorobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Chemical Analysis Soil Samples

Our Ref 15-29428

Client Ref SRL164

Contract Title Bonc Wen

Lab No	781173	781174	781175	781176
Sample ID	TP03	TP04	TP04	TP04
Depth	1.00	0.30	1.00	1.75
Other ID				
Sample Type	ES	ES	ES	ES
Sampling Date	09/03/15	09/03/15	09/03/15	09/03/15
Sampling Time	n/s	n/s	n/s	n/s

Test	Method	LOD	Units				
Pentachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-butylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Butylbenzylphthalate	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Bis(2-ethylhexyl)phthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Di-n-octylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,4-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dimethylphthalate	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,3-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
1,2-Dinitrobenzene	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
2,3,5,6-Tetrachlorophenol	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Azobenzene	DETSC 3433	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Carbazole	DETSC 3433*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Summary of Asbestos Analysis

Soil Samples

Our Ref 15-29428
 Client Ref SRL164
 Contract Title Bonc Wen

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
781167	TC 02 0.90	SOIL	NAD	none	Colin Patrick
781168	TC 01 1.30	SOIL	NAD	none	Colin Patrick
781169	TP 01 0.50	SOIL	NAD	none	Colin Patrick
781170	TP 02 0.30	SOIL	NAD	none	Colin Patrick
781171	TP 02 0.80	SOIL	NAD	none	Colin Patrick
781172	TP 03 0.55	SOIL	NAD	none	Colin Patrick
781173	TP03 1.00	SOIL	NAD	none	Colin Patrick
781174	TP04 0.30	SOIL	NAD	none	Colin Patrick
781175	TP04 1.00	SOIL	NAD	none	Colin Patrick
781176	TP04 1.75	SOIL	NAD	none	Colin Patrick

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Information in Support of the Analytical Results

Our Ref 15-29428
Client Ref SRL164
Contract Bonc Wen

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
781167	TC 02 0.90 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781168	TC 01 1.30 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781169	TP 01 0.50 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781170	TP 02 0.30 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781171	TP 02 0.80 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781172	TP 03 0.55 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781173	TP03 1.00 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781174	TP04 0.30 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781175	TP04 1.00 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
781176	TP04 1.75 SOIL	09/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months



Certificate of Analysis

Certificate Number 15-31488-1

22-Apr-15

Client Strata Renewables
Jodrell Bank Service Station
Knutsford Road
Cranage
Cheshire
CW4 8HU

Our Reference 15-31488-1

Client Reference SRL164

Contract Title Bonc Wen

Description 15 Soil samples.

Date Received 02-Apr-15

Date Started 02-Apr-15

Date Completed 22-Apr-15

Test Procedures Identified by prefix DETSn (details on request), Asbestos Analysis DETSC 1101.

Notes **This report supersedes 15-31488, Extra Testing**

Opinions and interpretations are outside the scope of UKAS accreditation. This certificate is issued in accordance with the accreditation requirements of the United Kingdom Accreditation Service. The results reported herein relate only to the material supplied to the laboratory. Observations and interpretations are outside the scope of ISO 17025. This certificate shall not be reproduced except in full, without the prior written approval of the laboratory.

Approved By

A handwritten signature in black ink, appearing to read 'Rob Brown'.

Rob Brown
Business Manager



Summary of Chemical Analysis

Soil Samples

Our Ref 15-31488-1

Client Ref SRL164

Contract Title Bonc Wen

Lab No	792680	792681	792682	792683	792684	792685
Sample ID	BH2	BH2	BH2	BH3	BH3	BH3
Depth	1.00	2.00	3.00	0.50	2.00	3.00
Other ID	2	3	4	2	4	5
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	31/03/15	31/03/15	31/03/15	31/03/15	31/03/15	31/03/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	9.2	9.6	4.1	15	7.8	5.8
Barium	DETSC 2301#	1.5	mg/kg	54	69	43	200	110	72
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	0.8	0.4	1.6	1.2	1.2
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	0.7	1.6	0.8	1.5	1.6	1.3
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	0.6	0.3	1.3	0.8	1.4
Chromium	DETSC 2301#	0.15	mg/kg	11	13	10	38	17	12
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	19	20	10	46	16	23
Lead	DETSC 2301#	0.3	mg/kg	42	47	25	96	32	24
Mercury	DETSC 2325#	0.05	mg/kg	0.06	0.05	< 0.05	0.18	< 0.05	< 0.05
Nickel	DETSC 2301#	1	mg/kg	14	13	11	29	22	23
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	18	22	9.9	53	26	16
Zinc	DETSC 2301#	1	mg/kg	90	69	21	280	75	150
Inorganics									
pH	DETSC 2008#			8.1	7.7	7.4	11.5	11.8	11.2
Cyanide Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.3	0.1	0.2	< 0.1	< 0.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	24	170	110	390	80	260
Sulphide	DETSC 2024#	10	mg/kg	56	76	48	140	150	310
Total Sulphate as SO4	DETSC 2321#	0.01	%	0.07	0.10	0.05	0.50	0.26	0.22
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.9	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	1.9	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	12	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	3.7	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	14	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	13	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	4.3	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	4.4	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	3.2	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	2.3	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	4.6	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	2.5	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.5	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	< 0.1	< 0.1	2.6	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	< 1.6	< 1.6	< 1.6	71	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 15-31488-1

Client Ref SRL164

Contract Title Bonc Wen

Lab No	792686	792687	792688	792689	792690	792691
Sample ID	BH4	BH4	BH4	BH4	BH4	BHY1
Depth	0.20	0.50	1.00	2.00	3.00	1.00
Other ID	1	2	3	4	5	2
Sample Type	ES	ES	ES	ES	ES	ES
Sampling Date	31/03/15	31/03/15	31/03/15	31/03/15	31/03/15	31/03/15
Sampling Time	n/s	n/s	n/s	n/s	n/s	n/s

Test	Method	LOD	Units						
Metals									
Arsenic	DETSC 2301#	0.2	mg/kg	9.7	7.2	30	16	12	7.5
Barium	DETSC 2301#	1.5	mg/kg	120	210	250	190	150	100
Beryllium	DETSC 2301#	0.2	mg/kg	1.0	1.5	1.6	1.6	1.2	0.5
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	1.2	1.4	1.1	1.2	0.8	0.6
Cadmium	DETSC 2301#	0.1	mg/kg	1.4	2.4	4.5	1.3	1.4	0.7
Chromium	DETSC 2301#	0.15	mg/kg	19	22	31	38	17	13
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	30	31	58	46	43	16
Lead	DETSC 2301#	0.3	mg/kg	87	230	580	94	140	61
Mercury	DETSC 2325#	0.05	mg/kg	0.08	0.08	0.07	0.08	0.06	< 0.05
Nickel	DETSC 2301#	1	mg/kg	24	26	44	28	29	21
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	25	46	50	51	18	12
Zinc	DETSC 2301#	1	mg/kg	300	700	1400	280	1000	50
Inorganics									
pH	DETSC 2008#			10.8	9.0	10.0	9.6	7.2	8.3
Cyanide Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1	< 0.1	< 0.1
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	1400	1400	950	1300	320	41
Sulphide	DETSC 2024#	10	mg/kg	64	120	400	110	60	12
Total Sulphate as SO4	DETSC 2321#	0.01	%	0.55	0.37	0.58	0.39	0.15	0.02
PAHs									
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	< 1.0	< 0.1	0.1	< 0.1	< 0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	0.2	< 1.0	< 0.1	0.3	< 0.1	< 0.1
Acenaphthene	DETSC 3301	0.1	mg/kg	0.2	< 1.0	< 0.1	0.2	< 0.1	< 0.1
Fluorene	DETSC 3301	0.1	mg/kg	0.3	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1
Phenanthrene	DETSC 3301	0.1	mg/kg	1.6	2.2	0.4	0.2	< 0.1	< 0.1
Anthracene	DETSC 3301	0.1	mg/kg	0.6	< 1.0	0.2	< 0.1	< 0.1	< 0.1
Fluoranthene	DETSC 3301	0.1	mg/kg	3.4	4.5	1.2	0.4	< 0.1	< 0.1
Pyrene	DETSC 3301	0.1	mg/kg	3.0	4.0	1.1	0.4	< 0.1	< 0.1
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	1.6	< 1.0	0.7	< 0.1	< 0.1	< 0.1
Chrysene	DETSC 3301	0.1	mg/kg	1.4	< 1.0	0.5	< 0.1	< 0.1	< 0.1
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	1.1	< 1.0	0.5	< 0.1	< 0.1	< 0.1
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	0.8	< 1.0	0.4	< 0.1	< 0.1	< 0.1
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	1.7	< 1.0	0.7	< 0.1	< 0.1	< 0.1
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	0.8	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	0.7	< 1.0	< 0.1	< 0.1	< 0.1	< 0.1
PAH	DETSC 3301	1.6	mg/kg	18	< 16.0	5.7	1.7	< 1.6	< 1.6
Phenols									
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	< 0.3	1.8	0.5	< 0.3	< 0.3	< 0.3

Summary of Chemical Analysis

Soil Samples

Our Ref 15-31488-1

Client Ref SRL164

Contract Title Bonc Wen

Lab No	792692	792693	792694
Sample ID	BH1	TC 01	TC 02
Depth	2.00	0.60	0.60
Other ID	3	1	1
Sample Type	ES	ES	ES
Sampling Date	31/03/15	31/03/15	31/03/15
Sampling Time	n/s	n/s	n/s

Test	Method	LOD	Units			
Metals						
Arsenic	DETSC 2301#	0.2	mg/kg	7.0	7.6	7.7
Barium	DETSC 2301#	1.5	mg/kg	75	210	110
Beryllium	DETSC 2301#	0.2	mg/kg	0.7	1.5	0.6
Boron (water soluble)	DETSC 2123#	0.2	mg/kg	1.1	1.2	1.4
Cadmium	DETSC 2301#	0.1	mg/kg	0.7	2.7	0.8
Chromium	DETSC 2301#	0.15	mg/kg	14	22	13
Hexavalent Chromium	DETSC 2204*	1	mg/kg	< 1.0	< 1.0	< 1.0
Copper	DETSC 2301#	0.2	mg/kg	15	35	17
Lead	DETSC 2301#	0.3	mg/kg	42	330	110
Mercury	DETSC 2325#	0.05	mg/kg	< 0.05	0.23	0.12
Nickel	DETSC 2301#	1	mg/kg	17	26	21
Selenium	DETSC 2301#	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Vanadium	DETSC 2301	0.8	mg/kg	15	45	13
Zinc	DETSC 2301#	1	mg/kg	44	860	90
Inorganics						
pH	DETSC 2008#			10.3	7.4	9.5
Cyanide Total	DETSC 2130#	0.1	mg/kg	< 0.1	0.1	0.2
Sulphate Aqueous Extract as SO4	DETSC 2076#	10	mg/l	310	550	220
Sulphide	DETSC 2024#	10	mg/kg	48	260	860
Total Sulphate as SO4	DETSC 2321#	0.01	%	0.12	0.21	0.41
PAHs						
Naphthalene	DETSC 3301	0.1	mg/kg	< 0.1	0.2	0.1
Acenaphthylene	DETSC 3301	0.1	mg/kg	< 0.1	0.3	0.3
Acenaphthene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	1.1
Fluorene	DETSC 3301	0.1	mg/kg	< 0.1	0.4	1.9
Phenanthrene	DETSC 3301	0.1	mg/kg	< 0.1	2.1	11
Anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	4.4
Fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	3.9	23
Pyrene	DETSC 3301	0.1	mg/kg	< 0.1	4.3	18
Benzo(a)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	1.9	7.7
Chrysene	DETSC 3301	0.1	mg/kg	< 0.1	2.1	7.7
Benzo(b)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	1.2	5.0
Benzo(k)fluoranthene	DETSC 3301	0.1	mg/kg	< 0.1	0.8	3.0
Benzo(a)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	2.1	6.7
Indeno(1,2,3-c,d)pyrene	DETSC 3301	0.1	mg/kg	< 0.1	1.3	4.0
Dibenzo(a,h)anthracene	DETSC 3301	0.1	mg/kg	< 0.1	0.6	1.1
Benzo(g,h,i)perylene	DETSC 3301	0.1	mg/kg	< 0.1	0.9	3.5
PAH	DETSC 3301	1.6	mg/kg	< 1.6	23	98
Phenols						
Phenol - Monohydric	DETSC 2130#	0.3	mg/kg	0.3	< 0.3	< 0.3

Summary of Asbestos Analysis

Soil Samples

Our Ref 15-31488-1
 Client Ref SRL164
 Contract Title Bonc Wen

Lab No	Sample ID	Material Type	Result	Comment*	Analyst
792680	BH2 2 1.00	SOIL	NAD	none	J Woodmansey
792681	BH2 3 2.00	SOIL	NAD	none	J Woodmansey
792682	BH2 4 3.00	SOIL	NAD	none	J Woodmansey
792683	BH3 2 0.50	SOIL	NAD	none	J Woodmansey
792684	BH3 4 2.00	SOIL	NAD	none	J Woodmansey
792685	BH3 5 3.00	SOIL	NAD	none	J Woodmansey
792686	BH4 1 0.20	SOIL	NAD	none	J Woodmansey
792687	BH4 2 0.50	SOIL	NAD	none	J Woodmansey
792688	BH4 3 1.00	SOIL	NAD	none	J Woodmansey
792689	BH4 4 2.00	SOIL	NAD	none	J Woodmansey
792690	BH4 5 3.00	SOIL	NAD	none	J Woodmansey
792691	BHY1 2 1.00	SOIL	NAD	none	J Woodmansey
792692	BH1 3 2.00	SOIL	NAD	none	J Woodmansey
792693	TC 01 1 0.60	SOIL	NAD	none	J Woodmansey
792694	TC 02 1 0.60	SOIL	Chrysotile	none	J Woodmansey

Crocidolite = Blue Asbestos, Amosite = Brown Asbestos, Chrysotile = White Asbestos. Anthophyllite, Actinolite and Tremolite are other forms of Asbestos. Samples are analysed by DETSC 1101 using polarised light microscopy in accordance with HSG248 and documented in-house methods. NAD = No Asbestos Detected. Where a sample is NAD, the result is based on analysis of at least 2 sub-samples and should be taken to mean 'no asbestos detected in sample'. Key: * - not included in laboratory scope of accreditation.

Summary of Asbestos Quantification Analysis

Soil Samples

Our Ref 15-31488-1

Client Ref SRL164

Contract Title Bonc Wen

Lab No	792694
Sample ID	TC 02
Depth	0.60
Other ID	1
Sample Type	SOIL
Sampling Date	31/03/15
Sampling Time	

Test	Method	Units	
Total Mass% Asbestos (a+b+c)	DETSC 1102	Mass %	< 0.001
Gravimetric Quantification (a)	DETSC 1102	Mass %	na
Detailed Gravimetric Quantification (b)	DETSC 1102	Mass %	<0.001
Quantification by PCOM (c)	DETSC 1102	Mass %	na
Potentially Respirable Fibres (d)	DETSC 1102	Fibres/g	na

Breakdown of Gravimetric Analysis (a)

Mass of Sample		g	67.04
ACMs present*		type	
Mass of ACM in sample		g	
% ACM by mass		%	
% asbestos in ACM		%	
% asbestos in sample		%	

Breakdown of Detailed Gravimetric Analysis (b)

% Amphibole bundles in sample		Mass %	na
% Serpentine bundles in sample		Mass %	<0.001

Breakdown of PCOM Analysis (c)

% Amphibole fibres in sample		Mass %	na
% Serpentine fibres in sample		Mass %	na

Breakdown of Potentially Respirable Fibre Analysis (d)

Amphibole fibres		Fibres/g	na
Chrysotile fibres		Fibres/g	na

* Denotes test or material description outside of UKAS accreditation.
 % asbestos in Asbestos Containing Materials (ACMs) is determined by
 by reference to HSG 264.
 Recommended sample size for quantification is approximately 1kg
 # denotes deviating sample

Information in Support of the Analytical Results

Our Ref 15-31488-1
Client Ref SRL164
Contract Bonc Wen

Containers Received & Deviating Samples

Lab No	Sample ID	Date Sampled	Containers Received	Holding time exceeded for tests	Inappropriate container for tests
792680	BH2 1.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792681	BH2 2.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792682	BH2 3.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792683	BH3 0.50 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792684	BH3 2.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792685	BH3 3.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792686	BH4 0.20 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792687	BH4 0.50 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792688	BH4 1.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792689	BH4 2.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792690	BH4 3.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792691	BHY1 1.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792692	BH1 2.00 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792693	TC 01 0.60 SOIL	31/03/15	GJ 250ml, GJ 60ml x2, PT 1L x2		
792694	TC 02 0.60 SOIL	31/03/15	PT 1L x2		Naphthalene, PAH FID

Key: G-Glass P-Plastic J-Jar T-Tub

DETS cannot be held responsible for the integrity of samples received whereby the laboratory did not undertake the sampling. In this instance samples received may be deviating. Deviating Sample criteria are based on British and International standards and laboratory trials in conjunction with the UKAS note 'Guidance on Deviating Samples'. All samples received are listed above. However, those samples that have additional comments in relation to hold time and/or inappropriate containers are deviating due to the reasons stated. This means that the analysis is accredited where applicable, but results may be compromised due to sample deviations. If no sampled date (soils) or date+time (waters) has been supplied then samples are deviating. However, if you are able to supply a sampled date (and time for waters) this will prevent samples being reported as deviating where specific hold times are not exceeded and where the container supplied is suitable.

Soil Analysis Notes

Inorganic soil analysis was carried out on a dried sample, crushed to pass a 425µm sieve, in accordance with BS1377.

Organic soil analysis was carried out on an 'as received' sample. Organics results are corrected for moisture and expressed on a dry weight basis.

The Loss on Drying, used to express organics analysis on an air dried basis, is carried out at a temperature of 28°C +/-2°C.

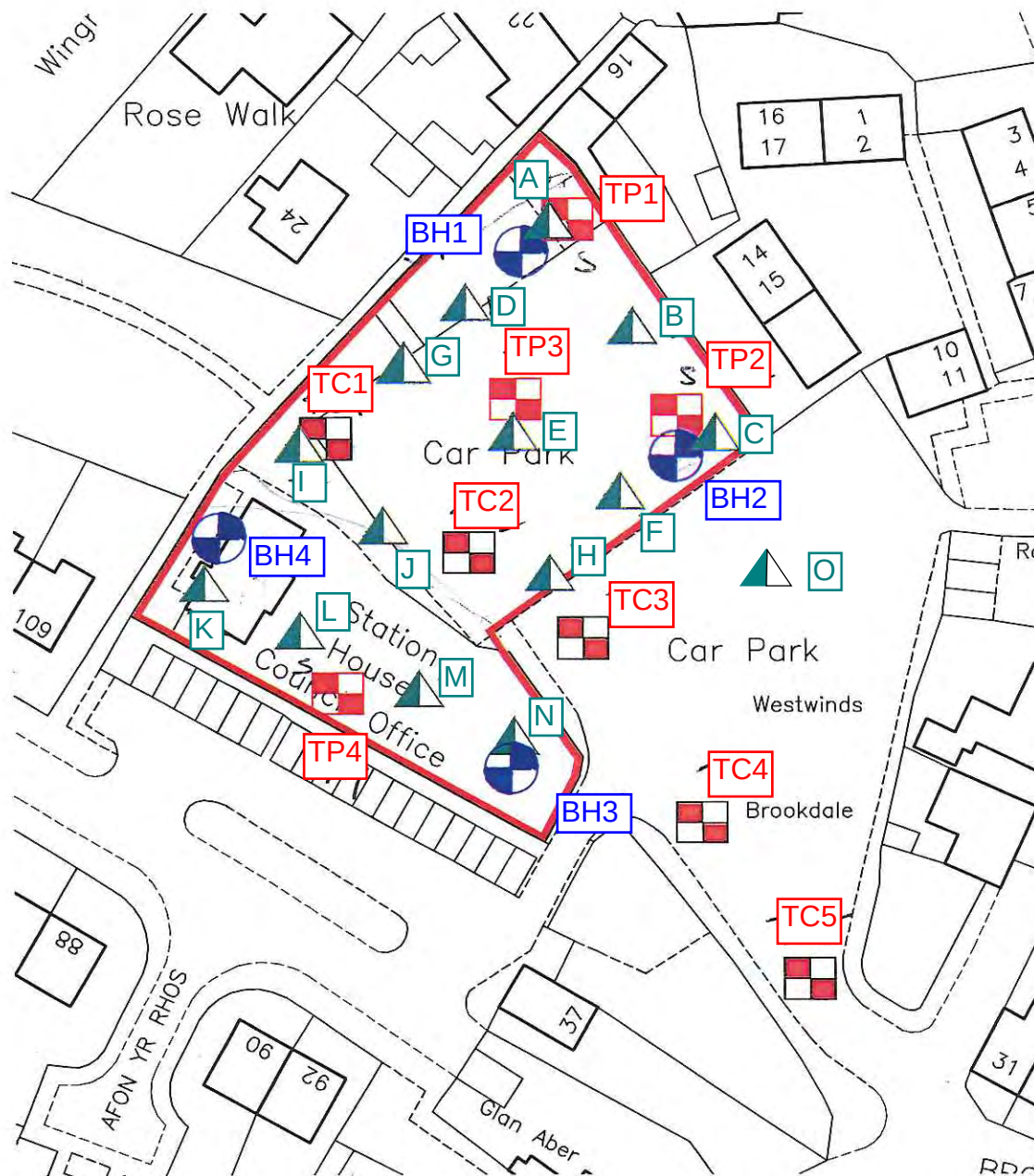
Disposal

From the issue date of this test certificate, samples will be held for the following times prior to disposal :-

Soils - 1 month, Liquids - 2 weeks, Asbestos (test portion) - 6 months

APPENDIX 4 BOREHOLE LOCATION PLAN





Ground Investigation



Trial Pit



Dynamic Probe



Borehole



Trial Pit + CBR

TITLE

Site investigation

PROJECT

Bonc Wen,
Rhosllanerchugog



Yr Amlyd
S-4 Chwilioedd
Cwmwl
01222 67557
01222 67558
info@datrys.com
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Telephone
Fax
E-mail
Internet

Job No.	14186	DATE	2/2/2015	SCALE	N/A
ACAD Ref.	-	CHECKED		PASSED	
DRAWN	NHW	DRG No.	14186/SI	REV	

APPENDIX 5 SITE LOCATION PLAN.



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